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BY LOUIS BATHE RAWLING, M.B. CANTAB., F.R.C.S. ENG.,

SENIOR DEMONSTRATOR OF ANATOMY, ST. BARTHOLOMEW'S HOSPITAL.

LECTURE III.[1]

Delivered on March 4th.

IMPLICATION OF NERVES IN BASIC FRACTURES.

MR. PRESIDENT AND GENTLEMEN,—I have already shown that fractures of the base tend to involve many of the basic foramina. The nerves, however, which make their exit through these foramina are protected by strong dural sheaths, which fact accounts for their frequent escape from injury. Nevertheless, many of the nerves are liable to injury and I propose, therefore, to discuss briefly each nerve in turn with respect to this special liability, indicating the particular fracture present, with the result and prognosis.

1. *The olfactory nerve.*—The great majority of fractures involving the anterior fossa pass through the weak cribriform plate of the ethmoid and necessarily injure the fine filaments of the olfactory bulb. The bulb itself may be lacerated, with or without injury to the neighbouring parts of the under aspect of the frontal lobes. Such an injury may also be produced as the result of a blow over the occipital region, an exemplification of laceration by contre-coup. Sir Prescott Hewett considered that loss of smell is most frequently the result of blows on the back of the head. My experience, however, goes to prove that anosmia, unilateral or bilateral, transient or permanent, results almost invariably from direct fractures involving the cribriform plate. The actual proof of an immediate loss of smell is difficult to arrive at since the nares are usually blocked by blood clot, &c., but a careful examination at all stages of the illness and of the convalescence shows that temporary loss of smell is common, whilst permanent anosmia is rare.

2. *The optic nerves.*—Cases have from time to time been recorded of complete and sudden blindness of one eye following a severe head injury, and at first sight this result is not easily explained, since the great majority of fractures in the vicinity of the optic foramina tend to pass to or from the cribriform plate between the two foramina or more externally through the sphenoidal fissure. Small fissured fractures not infrequently radiate to the optic foramina, but they are usually of so slight a nature as to be incapable of causing any gross lesion of this nerve. No doubt hæmorrhage into the sheath of the optic nerve is responsible for a certain small proportion of these cases but taking into consideration the very common existence of a fracture through the base of the anterior clinoid process, and the frequent dislocation of the fragment, it is highly probable that the loss of vision is secondary to a fracture tearing off the corresponding anterior clinoid process, the fragment compressing or tearing the optic nerve beneath. These cases are so rare that I am only able to put this forward as a suggestion.

3 *The nerves passing along the cavernous sinus and through the sphenoidal fissure. The ophthalmic division of the fifth nerve.*—The main trunk of this nerve as it runs along the outer wall of the cavernous sinus is never subject to such injury as to result in anæsthesia of the parts supplied by all three of its terminal divisions. The extravasation of blood into the peri-orbital tissues may, however, result in a complete loss of function of one or more of its branches and cases are recorded where there has been complete anæsthesia of both cornea and conjunctiva with subsequent ulceration and sloughing. The nasal branch may alone be implicated as the result of a fracture involving the cribriform plate and the supra-orbital and supratrochlear divisions may be damaged by a fracture of the vertical plate of the frontal bone. When the anæsthesia is the result of pressure from extravasated blood the prognosis is favourable, but when a nerve is involved in the fracture the anæsthesia is generally permanent. The *third* nerve is similarly liable to injury in its orbital course, the only peculiarity being that some of its branches are picked out and the others left uninjured. The *fourth* nerve is occasionally involved but always in conjunction with other nerves.

The second and third divisions of the fifth nerve.—The foramen rotundum and the foramen ovale lie anterior to the petro-sphenoidal suture, along which suture most middle fossa fractures pass. These two nerves consequently escape direct injury, though they may rarely be involved, together with the first division of the fifth nerve, through implication of the Gasserian ganglion. In 1852 H. Lee[2] reported a case where seven weeks after the injury the following symptoms were present: anæsthesia of the left face and forehead, anæsthesia of the anterior two-thirds of the tongue on the left side, anæsthesia of the left nostril, weak left masticatory muscles, and opaque left cornea. The fracture peculiar to such cases is one in which the terminal part of the apex of the petrous bone is broken off in an antero-posterior direction, the fracture traversing the cavum Meckelii. These fractures are rare and I have only seen two cases.

The sixth nerve may be either compressed, in conjunction with other nerves, by extravasated blood during its passage forwards from the cavernous sinus or it may be the only nerve paralysed, with consequent abductor paralysis of the eyeball. Such cases are not uncommon and this isolated paralysis of the sixth nerve results from the implication of the nerve as it laterally grooves the dorsum ephippii, which process is occasionally torn across in a fracture passing from one middle fossa to the other. The paralysis is generally unilateral, the fracture crossing the dorsum ephippii in an oblique direction.

The seventh and eighth nerves.—There can be no doubt that the seventh nerve is more commonly involved than any other nerve in basic fractures owing mainly to its complicated intrapetrous course. Köhler records 22 cases in 48 cases of fractured base; Bidwell records 15 cases in 106 cases of fractured base; and Battle records 15 cases in 168 cases of fractured base. My own experience leads me to the view that Köhler's statistics are the more accurate, as 24 cases of facial paralysis, partial or complete, were seen in 60 cases of fractured base, 12 in 32 cases that recovered and 12 in 28 fatal cases.

The question of facial nerve implication is so bound up with auditory symptoms that the two subjects must be treated together and classified into two main groups: (1) early and partial paralysis of the facial nerve, accompanied by a variable degree of deafness; and (2) early and complete paralysis of the facial nerve, accompanied by complete deafness. In the first group are included the great majority of middle fossa fractures, such fractures tending to involve the auditory region, and evidenced, amongst other symptoms, by hæmorrhage from the external auditory meatus. A greater or lesser degree of facial paralysis is usually present, not always obvious at first sight, but requiring a careful scrutiny and comparison of the two sets of facial muscles. The fracture passes inwards along the roof of the external auditory meatus towards the junction of the anterior and internal walls of the middle ear, the membrane undergoing a variable degree of destruction with or without dislocation of the ossicles. The fracture then passes inwards to the region of the petro-sphenoidal suture in such a manner that the geniculate ganglion of the facial nerve is exposed and laid bare on the anterior aspect of the posterior fragment. The main trunk of the nerve consequently escapes injury except in the region of the genu, where it may be compressed by blood clot sufficing to produce a partial temporary loss of function. In most cases the clot is entirely absorbed and a complete recovery can be expected. The degree of deafness varies according to the extent of damage done to the membrane and ossicles, such being most extensive when the injury results from a direct blow over the auricular region. In many cases, however, the recovery is complete. In the second class of cases the fracture is quite different. Usually the result of a blow on the occipital region, the fracture traverses the thin cerebellar fossa to the outer margin of the jugular foramen. Thence the fracture cuts

[1] Lectures I. and II. were published in THE LANCET of April 9th (p. 973) and 16th (p. 1034), 1904, respectively.

[2] Medical Times and Gazette.

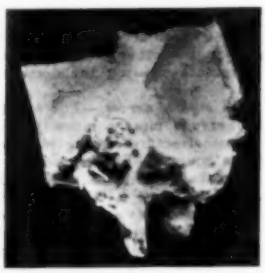
across the petrous bone, external to the internal auditory meatus, and terminates usually by comminuting the tegmen tympani. It is in this transpetrous course of the fracture that the irreparable damage is done, for not only is the facial nerve cut clean across in the region of the genu but the auditory apparatus is also severed into two parts. The exact line of the fracture is shown in Fig. 15. The outer

FIG. 15.

Right petrous bone, showing a fracture running in the antero-posterior direction. The internal auditory meatus is seen.

fragment is the more interesting and the next two figures explain in detail the parts involved. Fig. 16 shows the open mouths of the semicircular canals, the outer parts of the fenestra ovalis, of the promontory and of the fenestra

FIG. 16.



The outer fragment of the same specimen viewed from the inner side showing the semicircular canals, the facial aqueduct, the ossicles, and the membrana tympani.

rotunda, and the exposed mastoid antrum, whilst the malleus, the incus, and the membrane are absolutely uninjured. In Fig. 17 the comminution of the tegmen is more extensive but otherwise the parts exposed are similar to the preceding

FIG. 17.

A more extended fracture of the right petrous bone. This specimen also shows the inner aspect of the outer fragment together with the mastoid antrum, a probe in the facial aqueduct, the ossicles, the membrana tympani, the semicircular canals, the internal carotid artery, a probe in the Eustachian canal, and the foramen ovale.

case. In addition, however, the specimen shows that the fracture involves the petro-sphenoidal suture, passing posterior to the foramina ovale and spinosum but anterior to the horizontal part of the internal carotid artery. The long probe is passed along the Eustachian tube and the smaller is insinuated into the horizontal part of the aqueductus Fallopii. In these cases, therefore, though the facial paralysis and deafness are both complete and permanent, there is no external auditory hæmorrhage.

Two points further need reference, the first being the rare variety of fracture described by Léon Boullett in 1878, under the title of "fracture of the mastoid portion of the temporal bone" secondary to direct blows on the mastoid process, with a consequent separation of that process from the rest of the skull, the facial nerve in the descending part of the aqueduct usually being injured. Lastly, *late* paralysis of the nerve is occasionally seen after the lapse of a few days, secondary either to a septic infection with an ascending neuritis or to the organisation of the blood clot around the genu of the nerve. The diagnosis between these two conditions is simplified by the presence or absence of pyrexia, rigors, vomiting, &c.

The ninth, tenth, and eleventh nerves.—The jugular foramen lies in the path of more than one line of basic fracture. The nerves, however, are well protected and usually escape injury. Cases are now and again seen in which the result is less favourable, the following being a brief abstract of such a case. The patient was admitted with a fracture of the posterior part of the parietal bone and for four days, beyond restlessness, no special symptoms were evident. On the fifth day there was a sudden attack of severe dyspnœa with diaphragmatic respiration only. The conditions improved till the sixth day, when he was again seized with another attack of acute dyspnœa, accompanied by dysphagia, during which death occurred. The examination showed a fissured fracture extending into the jugular foramen which was occupied by a blood clot. A similar case was recorded in THE LANCET in 1853, in which the patient, who was admitted with a fractured base, was doing well till the tenth day, when, on getting up from his bed, he was seized with rigors, vomiting, dysphagia, and dyspnœa, dying shortly afterwards. A fracture was found practically dividing the skull into two halves and involving the jugular foramen. Displacement of the two parts had taken place with compression of the nerves. Delfau and Günther narrate a case where death resulted from compression of the vagus. The only case that has come under my own personal notice in which the structures passing through the jugular foramen were directly involved was that of a man who committed suicide by firing a bullet through the roof of the mouth. The bullet, impinging against the tympanic plate, was divided into two parts, the outer fracturing the floor of the external auditory meatus, the inner lodging in the jugular fossa, lacerating the lateral sinus and tearing the nerves as they made their exit through the jugular foramen. Death was instantaneous.

The twelfth nerve.—I have no personal experience of fractures involving the foramen through which this nerve passes and on comparing the position of the anterior condyloid foramen with the definite paths of basic fractures to which I alluded in my first lecture any implication of this foramen appears to be highly improbable.

THE TEMPERATURE IN ITS RELATION TO HEAD INJURIES.

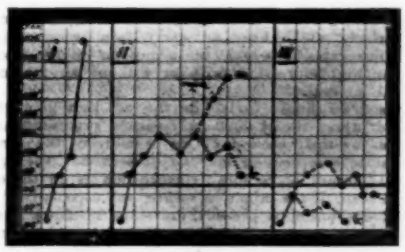
For some considerable period of time it has been a well-recognised fact that injuries of the head result in definite temperature changes. Broca, Battle, Guyon, and others have endeavoured to deduce facts from an examination of such cases but no definite result was arrived at beyond the fact that there was some ratio between the change in temperature and the co-existent lesion. In all those cases which were seen by me and in which a post-mortem examination was subsequently made a comparison was instituted between the temperature charges during life and the lesions found after death. The conclusions arrived at were as follows: 1. For a short and variable period of time after the receipt of the injury the temperature is always subnormal, sometimes so low that no thermometric calculation can be made. This is the period of shock which is in all severe cases very pronounced. 2. If the patient lives long enough reaction soon takes place and the temperature rises. 3. This rise of temperature is in fatal cases rapid and progressive. In one case the temperature rose 6° F. in seven hours and in another 8° in four hours. 4. In some cases the temperature rises to a more moderate height, rarely more than 102°, and then "marks time." This period marks the crisis of the case, for a subsequent rise or fall almost invariably indicates a fatal or favourable result. I

should explain, perhaps, that I am excluding for the present any alteration in temperature due to the onset of septic or pulmonary complications. 5. The rise of temperature is not dependent on any special bony lesion, since the same changes are seen in fractures of the vault and in fractures of the base, anterior, middle, or posterior fossa. 6. Laceration or contusion of the brain is generally present. The almost constant presence of some injury to the cerebral substance gave origin to the old theory that the temperature changes are secondary to brain laceration. Against this view, however, several facts can be brought forward: (*a*) Laceration is not always present even when the temperature runs high. In two cases, for instance, the temperature rose to 106° and yet there was no sign of contusion or laceration. (*b*) Laceration, even when extensive, is not necessarily followed by any elevation of temperature. (*c*) The elevation of temperature is absolutely independent of laceration of any particular area. Richet[3] arrives at the conclusion that two hypotheses present themselves, accounting for the elevation of temperature, between which it is difficult to decide. Either there are certain temperature regulators in the encephalon which when excited become stimulated in function, or else the cortical injury acts in a sort of reflex manner on the regulatory centres situated in the pons or in the bulb. Attention is also drawn to the experiments of Lorin and van Benedin who, after excising the two cerebral hemispheres of a pigeon, showed that the heat regulatory power was preserved unaltered, proving that the corpus striatum is probably not the head office of the heat-regulating apparatus. Till, therefore, more evidence comes to hand with regard to heat regulation in general and the effects produced by injury, one cannot go beyond the broad statement that practically all severe cases of head injury show definite thermometric changes, the elevation of temperature not resulting from any special lesion of bone or of cortex but being probably due to the influence of the injury on the heat-regulating centres in the region of the pons or bulb, the temperature progressively rising as the cardiac and respiratory centres fail.

The next point to consider is the value of the temperature chart with regard to the prognosis of the case. All cases of fractured skull can be divided into three main groups, according to the thermometric changes, excluding any alterations secondary to septic, pulmonary, or other complications.

Group 1.—The temperature, at first subnormal, undergoes a steady and progressive rise. The prognosis is most unfavourable.

FIG. 18.



The temperature charts of the three typical groups.

Group 2.—The temperature, at first subnormal, rises gradually to 101° or 102° and then for a short time remains steady. This hesitation marks the crisis of the case, a further rise indicating a probable fatal result, whilst a fall in temperature offers hope of future recovery.

Group 3.—The temperature, at first subnormal, remains at that level, or rises to about normal without any subsequent further elevation. In the former case the patient, owing to the severity of the injury, never recovered from the stage of collapse, whilst in the latter case the injury was of so comparatively slight a nature that the stage of shock, being neither prolonged nor deep, was not subsequently followed by the stage of reaction.

These three groups of thermometric changes are so constant that I regard the temperature chart as the surest and as an almost infallible guide to the prognosis of the case. With regard to any alteration of temperature on the two sides of the body, in spite of an occasional relative increase of temperature on the side opposite to the injury, I have not been able to satisfy myself that such changes are sufficiently constant as to be of any diagnostic value.

[3] Dictionnaire de Physiologie.

CHANGES IN THE FUNDUS OCULI.

In 1887 Edmunds and Lawford published a paper in which attention was first drawn to this subject and statistics were given stating that optic neuritis was present in 12 out of 24 cases of head injury. A subacute basal meningitis was considered to be the cause of this neuritis. In 1890 Battle gave details of 17 cases, in five of which optic neuritis was diagnosed, and he suggested as a cause laceration of the under aspect of the frontal lobes. On reading these statements two questions must arise. Firstly, Are the explanations offered satisfactory; and secondly, Why should optic neuritis develop in cases of head injury uncomplicated by secondary septic infection? These points induced me to examine all cases that came under my notice, an examination of the fundus being carried out at all stages of the illness, with the result that two distinct varieties of fundus change were seen: (1) a disc with normal outline, the fundus, however, showing marked engorgement of the retinal veins, with small arteries; and (2) a fundus presenting all the signs of true optic neuritis. This latter variety was seen only in those cases which subsequently succumbed from septic meningeal infection, whilst the venous retinal engorgement was of common occurrence.

Now, one of the most striking features in the post-mortem examination of cases of head injury is the great engorgement of the superficial cerebral veins and this venous congestion is seen equally in fractures of the vault and in fractures of the base, with or without brain laceration, and also in cases of mere concussion only. The retinal engorgement is early in onset, being frequently seen within a few hours of the injury and long before any true optic neuritis could develop. It is most marked when the injury involves the anterior segment of the skull and it is not necessarily accompanied by laceration of the under surface of the frontal lobes. It is, however, most common when a fracture traverses the sphenoidal fissure or involves the cavernous sinus. As the patient improves, so also does the congestion diminish in direct ratio, any later development of true optic neuritis indicating the onset of an acute or of a subacute meningitis. I regard, therefore, this retinal venous engorgement as part and parcel of the general cerebral venous stasis, the condition being of no great clinical value with regard to the presence or absence of any fracture. Dr. Fleming has recently pointed out that retinal hæmorrhages are almost invariably present in basic fractures and, further, that when the subarachnoid hæmorrhage and venous congestion are unilateral the retinal hæmorrhages are mostly confined to the affected side. The subject of "optic atrophy" has been briefly discussed under "implication of nerves."

BRAIN LACERATION; CONCUSSION AND COMPRESSION.

Of all complications of fracture of the skull injury to the brain substance must be regarded as of the greatest importance, for on the presence or absence of such a lesion the ultimate result in the majority of cases depends. Some contusion or laceration of the brain is almost invariably present when the injury results from a fall from a height, the lesion varying from a mere bruising of the cerebral cortex, with extravasation of blood and serum into the subarachnoid space and into the meshes of the pia mater, to complete laceration of certain of the cortical areas. No part of the brain can be said to be exempt from such injuries, for though it is far more common to find laceration of the frontal and temporo-sphenoidal poles, yet one not infrequently finds laceration of the Rolandic area, of the occipital poles and cerebellum, and even of the deep nuclei of the brain. The relative frequency with which these various areas are injured is: (1) the anterior and inferior aspect of the frontal poles; (2) the anterior aspect of the temporo-sphenoidal poles; (3) the Rolandic area; (4) the occipital poles; (5) the cerebellum; and (6) the deep nuclei and the deep cortex.

Laceration may be seen directly beneath the seat of primary osseous injury or on the surface of the brain over an area exactly opposite to that at which the injury was received. Various theories have been brought forward to

explain this latter condition. 1. "Their production has been ascribed to the changes in form suffered by the skull in virtue of its elasticity when subjected to violence, which causes distortion of the brain to the point of rupture." 2. "In the displacement of the cerebro-spinal fluid by the consecutive cranial depression and bulging, which is believed to follow a blow on the head, a momentary vacuum is formed at either end of the axis of force and the vessels of the brain and membranes rupture from lack of support." These two theories, both ingenious in their way, are, nevertheless, untenable as they are based on an erroneous supposition. There is no practical evidence whatsoever to prove that the skull as the result of a blow sufficient in force to produce a fracture undergoes any change in shape in virtue of its supposed elasticity, or that "consecutive depression and bulging" is the sequel to the blow inflicted in that region. 3. The contrecoup theory, which states that the injury results from the sudden displacement of the brain against the bony cranium. The theory has been strenuously opposed by many, and notably by Helferich, on the ground that the brain is said to fill completely the bony cranium and, therefore, that any "shaking" of the brain from side to side is impossible. The contrecoup theory affords, however, the most satisfactory explanation of laceration of the brain over an area opposite to the seat of osseous injury, for (1) the frontal and temporo-sphenoidal poles are more subject to injury than any other part of the brain, each pole having peculiar anatomical relations rendering it more liable to injury. The frontal pole is in closer apposition and in closer relation to the bony barrier than any other part of the brain, whilst the temporo-sphenoidal pole projects into the cul de-sac at the anterior part of the middle fossa which is overhung by the lesser wing of the sphenoid. 2. The laceration is always seen to be situated at the pole directly opposite in the line of the transmitted forces. 3. Bruising, without laceration, is very commonly seen over the area of the brain exactly opposite to the part struck. 4. Laceration on the opposite side is most frequent in those cases where the injury is produced by falls from a height and it is in such cases that "shaking" of the brain is most likely to occur. The argument also that because the brain completely or almost completely fills the bony cranium "shaking" from side to side cannot occur is in itself fallacious, for the soft cerebral substance can be still more violently and forcibly driven up against the bony barrier as to be locally bruised and torn That a "shaking" of the brain can occur is evidenced by the following case. A prize fighter received a blow on the left side of the head and was knocked out. He was admitted into hospital unconscious and died on the third day. The post-mortem examination revealed no fracture of the vault or base but a linear laceration on the mesial aspect of the left hemisphere exactly corresponding in position to the free margin of the falx cerebri, showing that the brain had been so driven up against this firm and resisting barrier as to result in a corresponding laceration of the soft cerebral substance.

The lacerated area is usually cone-shaped, the base corresponding to the cortex, at which situation the brain destruction is most marked, whilst the apex of the cone extends inwards towards the lateral ventricles. In severe cases the anterior or lateral cornua of the lateral ventricle may be involved at the apex of this cone of laceration, and if further softening and fatty degeneration of the damaged cerebral substance subsequently result the horns of the ventricle may bulge, as it were, outwards towards the subarachnoid space, thus assisting in the formation of those cases of traumatic meningocele or meningo-encephalocele which communicate directly with the lateral ventricles If the degree of laceration be comparatively slight, and if the other injuries are compatible with life, organisation and partial resolution take place with the formation in nearly all cases of adhesions between the cortex and the overlying membranes, with the formation of false membranes, of arachnoid cysts, and of blood cysts, all such lesions being accompanied by a variable degree of fibroid degeneration of the corresponding cortical motor area.

For two main reasons the symptoms resulting from brain laceration are obscure. First, there is almost invariably a co-existent vault or basic fracture; and, secondly, the two areas most commonly involved, the frontal and temporo-sphenoidal poles, do not make evident any injury which they may receive by any peculiar and localising symptoms. When the Rolandic areas are involved irritative and paralytic symptoms may result, but symptoms of irritation are also seen in cases where extensive subarachnoid hæmorrhage is alone present and especially is this the case in children. Convulsions and paralysis, therefore, of the parts depending in function on the integrity of the cortical motor area are the only definite clinical symptoms indicative of brain laceration. The lesser degrees of laceration may lead to a spastic condition of the parts supplied by the affected area and laceration may be suspected also when the stage of unconsciousness is deep and prolonged. Even in such cases, however, laceration is not necessarily present. The symptoms, therefore, of brain laceration are generally obscured and over shadowed by those which are regarded as typical of the stages of concussion, irritation, and compression. The symptoms of concussion are sometimes regarded as necessarily implying the existence of brain laceration. With this opinion I am not in accord and for two main reasons. First, I have examined several cases where, in spite of concussion symptoms, no macroscopic or microscopic cerebral lesions were found; and, secondly, the rapid recovery of so many cases of concussion must necessarily exclude any such gross cortical lesions, lesions which must require a lengthened period of time before recovery could result. Concussion shows a very close analogy to the condition of shock, with certain superadded cerebral symptoms. Shock is referable to a stimulation of the depressor fibres of the vagus nerve, with consequent vaso-motor inhibition and weakening of the heart's action. The venous dilatation and engorgement, most evident in the splanchnic area, are also marked in the cerebral venous system, the cerebral circulation probably possessing no separate vaso-motor apparatus and therefore passively following the changes in the general circulation. The cerebral venous engorgement is accompanied by a condition of cerebral arterial anæmia which, together with a certain degree of disturbance in function of the cortical cells, results in a temporary cessation of cerebral function, with loss of consciousness, subnormal temperature, feeble rapid pulse, and shallow respiration. (Concussion, first stage.) The injury being comparatively slight the vaso-motor centre soon recovers tone and as the result of the previous inhibition the heart now beats more forcibly and the condition of cerebral arterial anæmia gives place to a state of cerebral arterial hyperæmia, evidenced by violent carotid pulsation, flushed face, elevated temperature, and general cephalalgia. (Concussion, second or reactionary stage.) This stage is usually ushered in by vomiting secondary to the hyperæmic condition of the vomiting centre. The main symptoms of concussion are evoked immediately on the receipt of the injury and they may be either followed by the symptoms peculiar to the reaction stage or they may remain as the prominent feature, only becoming more marked as the vital centres fail, a result common in those more severe cases of head injury which have an early fatal termination. In some few cases, however, the symptoms merge into those peculiar to compression, with or without an intermediate rational interval.

Some stress should be laid on the fact that in most cases of head injury the typical compression symptoms are conspicuous by their absence. One or more of the symptoms peculiar to compression may be present but the complete clinical picture of cerebral compression is in these cases seldom seen. If the injury be severe, and especially if laceration of the brain be present, the stage of shock is reflexly correspondingly increased, the cerebral arterial anæmia becoming more marked and the venous engorgement increased in direct ratio. The engorgement also of the right side of the heart tends to increase the cerebral venous pressure and since the cerebro-spinal tension and the cerebral venous pressure are equal, the greater the venous pressure the greater is the transudation from the veins into the brain and into the subarachnoid and other cerebro-spinal spaces, the transudation progressing till the two become equal. The cause being removed or the injury being of such a nature as not to exclude an attempt at recovery, the cerebral anæmia becomes less marked, the veins less congested, and transudation back into the veins occurs till a more or less normal condition is again reached. In the most severe cases the venous engorgement remains excessive and the cerebro-spinal tension correspondingly high, the patient passing through the stage of compression to the stage of collapse. An examination of such cases reveals the presence of much free fluid, especially in the cerebellar fossa, and also a general œdematous condition of the brain. Experiments show that from 3 to 6 per cent. of the cranial

capacity may be taken up by a foreign body without producing compression symptoms, owing to the escape of a corresponding quantity of cerebro-spinal fluid into the spinal canal. Any increase above this percentage results in compression symptoms, the general increase of cortical pressure leading first to the state of "slow cerebration," a condition characterised by slow speech and by a deadening of the mental powers and finally to a state of stupor and coma.

The special symptoms of compression are, however, probably referable to the effect of the increased pressure on the vital centres in the region of the bulb. That such is the case is suggested by the following facts: (1) the same compression symptoms result wherever the compression force primarily acts; (2) a fracture involving the posterior fossa gives rise to compression symptoms earlier than a fracture in any other more distal region; (3) experimentally an increased pressure in the posterior fossa produces compression symptoms earlier than when the pressure is applied to a more remote situation; (4) a far smaller foreign body kills in the bulbar region than in the cerebral chamber (Leonard Hill); and (5) the pressure effects are in no way due to excitation at the part of the brain chiefly pressed on, for after division of the mesencephalon the pressure was just as active in calling forth the changes in circulation and respiration (Sir Victor Horsley). Leonard Hill came to the conclusion that the main symptoms are produced by anæmia of the bulb and that mechanical pressure was not the main factor. Whether this is the case or not, the main fact stands out clearly that both clinical and experimental evidence strongly suggest that the main compression symptoms are bulbar in origin.

The three stages—concussion, compression, and collapse—may follow one another, the second and the last resulting probably from early stimulation and later paralysis of the nuclei in the floor of the fourth ventricle. As previously stated, however, the severe nature of the lesion in most fatal cases of head injury more or less completely eliminates the transitional stage of typical compression. Death virtually results from paralysis of the respiratory centre, the heart usually beating for some seconds or minutes after all attempts at respiration have ceased. Some years ago I saw a case where, although respiration had ceased, the heart worked well as long as artificial respiration was kept up. This was done by relays of "dressers" for from two to three hours. Our endeavours to resuscitate the patient were then abandoned as hopeless and in a few minutes the heart ceased also.

TREATMENT.

Some few points in connexion with the treatment of the results of skull fracture have been alluded to under the different headings and the main points with regard to the general and local treatment now remain.

(*a*) *General treatment.*—In the early stage of shock and collapse the ordinary methods of overcoming that condition must be adopted. The head must be kept low and the heart's action encouraged by the usual remedies. The temperature should be taken every quarter of an hour and as soon as reaction *begins* the head should be elevated and the body depressed, ice applied to the head and warmth to the body, and free venesection performed, the amount of blood to be withdrawn being proportionate to the severity of the injury and the violence of the reaction. These recommendations are advised with the object of allowing some of the extravasated blood and fluid to gravitate into the vertebral canal and with the view of lessening as far as possible the subsequent intracranial exudation and pressure. Free venesection is especially efficacious in producing this result and the operation is best performed on the external jugular of the affected side. The lower bowel should be emptied early by means of copious enemata, purgatives given, and the bladder periodically attended to.

(*b*) *Local treatment.*—It is now a well-accepted fact that all punctured fractures and all markedly depressed fractures in adults, simple or compound, urgently call for operative interference. A large class of fractures remains, however, in which the question of any depression of the internal table is doubtful and the general tendency in these cases is to adopt an expectant treatment, waiting for any symptoms to develop. Many of these cases during their stay in the hospital do not offer any striking or trustworthy symptoms calling for operative treatment, and yet, if the cases be subsequently followed up, a large percentage develop some of the remoter effects of head injuries, such as chronic headache, irritability, or Jacksonian epilepsy, &c. These secondary results are undoubtedly due in most cases to the irritation produced by bony spicules from a depressed internal table, with blood effusion, with thickening of the meninges, and with the formation of blood cysts or of arachnoid cysts either beneath the seat of injury or on the opposite side of the brain. A mere fissured fracture may result from a blow on the vault, but this is the only common variety of vault fracture which is not accompanied by a further depression of the internal table. In addition to this I would again remind you that fractures of the internal table may be present without the existence of a fracture of the external table, and also that when both tables are involved the internal table is always the more damaged of the two, a very slight depression of the external table almost invariably indicating a far more extensive depression of the internal table. I advocate, therefore, early trephining and exploration in all doubtful cases. The actual danger of the operation is very slight, and though some years ago the mortality after trephining was said to be about 4 per cent., yet the death-rate at the present day is certainly much less than that.

The treatment of comminuted vault fractures.—The important question arises as to whether the comminuted fragments are to be replaced or not. A thorough exploration will generally necessitate the removal of all comminuted fragments, large and small, and the reposition of these fragments, either unaltered or converted into smaller portions, is open to two main objections. First, they act as a source of irritation and consequently increase the tendency to the formation of adhesions between the dura mater and the bone; and secondly, the actual utility of such methods, with regard to the future union and formation of new bone, is open to grave doubt. The smaller fragments, in any case, are generally absorbed. A third serious objection in compound comminuted fractures is that suppuration not infrequently occurs, the fragments undergoing caries or necrosis, keeping up the irritation and correspondingly increasing the chances of septic meningeal infection. It is advisable therefore to remove all comminuted fragments both in simple and in compound cases and to protect the brain by metal plates cut to a suitable size and shape and pegged or nailed in position. Both gold and aluminium plates are too stiff for moulding to the skull surface, and though pure silver possesses certain advantages over the other two metals yet further research is needed as to the relative advantages of these and other metals. By means of these plates the formation of adhesions between the brain or the dura mater and the scalp is prevented, such adhesions being a common cause of later epilepsy, insanity, &c. The dura mater when torn must be sewn up. If this is impossible all dural tags must be cut away and the future formation of adhesions between the brain and the dura mater and between the dura mater and the bony margins of the gap in the calvarium may be best prevented by the insinuation of thin gold foil between the brain and the dura mater and between the dura mater and the bone. The use of gold foil and of metal plates reduces to a minimum the possible formation of adhesions between any of the structures mentioned. When there is brain laceration, when the subarachnoid space is opened up and when the chances of suppuration are great the metal plate should then only incompletely close up the bony gap, a small area being left uncovered at the most dependent part to allow of free drainage.

Basic fractures with compression and basic fractures without compression but pointing to a fatal termination.—In these cases death in all probability results from the increased intracranial pressure acting most forcibly on the nuclei in the region of the fourth ventricle. The amount of fluid in the cerebellar fossæ is almost always much increased and I consequently put forward as a suggestion the following mode of treatment. When there is no obvious compressing agent present, such as a middle meningeal hæmorrhage, foreign body, &c., the cerebellar fossæ should be trephined as low down as the muscular attachments will allow, the left fossa being chosen if the injury was inflicted on the anterior part of the right side of the head, whilst if the blow was delivered on the right occipital region the cerebellar fossa of the same side should be explored. The opening should be of good size the dura mater opened, and the bone not replaced. A drainage-tube should lead through the flap to the gap in the skull. If the patient recovers the gap can, if necessary, be subsequently closed in. The cases for which this treatment is advocated almost invariably have a fatal termination, and the adoption of this method of treatment may add to the chances of recovery since the

lessening of the pressure in the region of the fourth ventricle will aid the nuclei to tide over the danger period. In conclusion, I would earnestly plead that all head cases should be treated for a more prolonged period of time either in the hospital or in the convalescent home. Six months should elapse before the patient goes back to his normal occupation and as much of this time as is possible should be spent under medical supervision. Iodides and mercury are of some use in hastening the resolution of blood and of inflammatory exudation and in diminishing the general cerebral irritability.

The Arris and Gale Lectures

ON

THE NEUROLOGY OF VISION.

Delivered before the Royal College of Surgeons of England on March 16th and 18th, 1904.

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LECTURE II.[1]

Delivered on March 18th.

THE INNERVATION OF THE PUPIL.

MR. PRESIDENT AND GENTLEMEN,—The iris consists of a highly vascular membrane, the blood-vessels of which are arranged radially. It also contains two muscles, composed of unstriped fibres—the sphincter and the dilatator. Of these the former is a compact ring of muscle situated near the pupillary margin; the latter is a thin layer of muscle situated near the posterior surface, the constituent fibres being arranged radially. Each muscle has a separate and independent motor nerve-supply.

The sphincter is innervated by the third cranial nerve, the pupil-constrictor fibres originating in the third nucleus in the floor of the aqueduct of Sylvius, passing out of the mesencephalon in the third nerve and running in the main trunk of the nerve as far as the orbit. The fibres here pass into the branch which supplies the inferior oblique, leaving it by the short root of the ciliary ganglion. From the ciliary ganglion they pass by the short ciliary nerves to the eye, piercing the sclerotic around the optic nerve and running forwards in the choroid and ciliary body to the iris.

The dilatator pupillæ is supplied by the cervical sympathetic nerve. The dilatator tract probably commences in the neighbourhood of the third nucleus in the mesencephalon, passing through the medulla oblongata, where its exact path is still unknown, into the lateral columns of the cord. The fibres leave the cord by the ventral roots of the first three thoracic nerves (cat, dog, ape), enter the rami communicantes, and run to the first thoracic or stellate ganglion. From here they mostly pass into the anterior limb of the ansulus of Vieussens, though some run in the posterior limb. They pass up the neck in the cervical sympathetic to the superior cervical ganglion. From here the dilator tract enters the skull by the cervico-Gasserian strand, running independently of the carotid plexus. It joins the Gasserian ganglion and passes thence into the first or ophthalmic division of the fifth nerve, following the nasal branch, which it leaves finally to enter the long ciliary nerves, thus avoiding the ciliary ganglion. The long ciliary nerves enter the eye on each side of the optic nerve and running forwards between the choroid and the sclerotic pass through the ciliary body to be distributed to the iris.

Paradoxical pupillo-constriction.—Under ordinary conditions the pupillo-constrictor centre emits tonic impulses, so that when these are cut off by section of the constrictor path in any position the pupil becomes slightly larger than normal. It has occasionally been observed that the pupil is smaller than normal; this is called paradoxical pupillo-constriction. It has been less frequently seen than paradoxical pupillo-dilatation, to which reference will be made later. Paradoxical pupillo-constriction has been investigated by Anderson (1902), only an abstract of his results having been as yet published. He found that after excision of the left ciliary ganglion and section of the right third nerve proximally of the ganglion in a kitten the two pupils were equally dilated until regeneration occurred on the right side eight days later. In a cat the right pupil continued to be widely dilated 38 days after division of the right short ciliary nerves. In certain circumstances, however, the pupil on the side of the excision was smaller—e.g., in the cat the right pupil was smaller in dim light than the left after local application of eserine to both eyes in equal quantity, and 18 days later the right pupil was smaller after the death of the cat. In another cat the left pupil immediately after excision of the left ciliary ganglion was very widely dilated but next day the left pupil had become slightly smaller and was smaller than the right in dim light if the cat became restless under observation. On the same day after administration of ether and section of both cervical sympathetic nerves the left pupil became a slit, though the right was almost maximally dilated, and for 48 hours after death the left pupil remained much smaller than the right. In other observations made two and 318 days after denervation of the sphincter on one side the pupil on the side of the lesion was smaller after the death of the animal, though previously it had been the larger since the denervation. Anderson concludes that the paradoxical pupillo-constriction is due to increased excitability of the denervated sphincter, the exciting stimuli in the observations mentioned being alterations in the blood-supply, eserine, and probably ether (see, however, the observations on paradoxical pupillo-dilatation).

Paradoxical pupillo-dilatation.—Paradoxical pupillo-dilatation is the antithesis of paradoxical pupillo-constriction. "Section of the cervical sympathetic causes constriction of the pupil and simultaneous removal of the superior cervical ganglion on the other side causes slightly greater constriction, as first shown by Budge, but in certain circumstances the pupil on the side without the ganglion becomes larger than the pupil on the side with the nerve alone cut. This greater dilatation on the more paralysed side has been called paradoxical pupil-dilatation by Langendorff. Moreover, if only a superior cervical ganglion be excised the pupil on the paralysed side may nevertheless become larger in certain circumstances than the normal pupil. This is also spoken of as paradoxical dilatation" (Anderson).

Budge (1855) first drew attention to the occurrence of paradoxical pupillo-dilatation. After section of the left sympathetic and of the branches above the right superior cervical ganglion in a young rabbit he found the right pupil smaller than the left half an hour later, equal after 24 hours, and the right larger than the left after 48 hours. Schiff (1868) observed the effect after section of the sympathetic and after excision of the ganglion; he connected the phenomenon with oxygenation of the blood after previous asphyxiation. Surminski (1869) and Tuwim (1881) observed it after atropin. Kowalewski (1886) saw it in a kitten after the administration of chloroform. Braunstein (1894) observed it after curare and Tuckett (1896) incidentally in the course of another research. Langendorff (1900) investigated the subject specially and noticed the phenomenon after anæsthetics and after death. Lewandowski (1900) also drew attention to these paradoxical effects and showed that they could be produced by dyspnœa. It was also observed incidentally by Langley (1901) and Levinsohn (1902).

The subject has been exhaustively investigated recently by Anderson (1903). He proved that the effect might be observed as soon as one day after the lesion and as long as more than a year. Excitement, dyspnœa, anæsthesia, and death are conditions which evoke the effect. It is produced much more readily by slight dyspnœa in kittens than in cats. The paradoxical effect persists even when the post-ganglionic branches of the ganglion have been allowed to regenerate. Immediately after removal of the ganglion on one side and section of the sympathetic on the other there is always greater paralysis on the side without the ganglion. Later there is frequently greater paralysis on the side with the nerve cut but if sufficient care is taken to insure a quiet condition of the cat the signs of greater paralysis are often transferred to the side without the ganglion. In the quiet condition of the cat the evidence is therefore often against the views (1) that the sphincter is weakened on the side without the ganglion (Budge, Tuwim, Levinsohn), or (2) that there is permanent contracture of the vessels of the iris

[1] Lecture I. was published in THE LANCET of April 16th, 1904, p. 1029.

or dilatation on this side (Surminski, Langendorff), or (3) that on the side with the ganglion the dilator is inhibited (Kowalewski).

After the local application of eserine to the eyes of a kitten the pupil is smaller on the side from which the superior cervical ganglion has been removed so long as the kitten is quiet, but slight dyspnœa will cause the pupil to become almost maximal, though the normal control pupil is very small. A similar result may be obtained when the sphincters are contracting strongly in bright light instead of under the influence of eserine. This paradoxical pupillo-dilatation must, therefore, result from an actual increase of tone in the dilator on the side without the ganglion. This increase of tone may be directly demonstrated in the nictitating membrane and lids. The paradoxical effect is therefore due to an increased excitability of the contractile tissues on the side without the ganglion (Lewandowski, Anderson). The great accentuation of the paradoxical effect seen under anæsthesia does not occur until dyspnœa arises. If only the sympathetic has been cut the paradoxical effects occur much later and are much less pronounced. The paradoxical effects show that the ganglion cannot inhibit the automatic excitability of the contractile tissues with which it is still in connexion. Bright light cannot inhibit the paradoxical dilatation through the third nerve, since the effect will still persist in bright sunlight for more than a minute.

Inhibition of antagonists.—It is known that in the case of the skeletal muscles contraction of a given group is accompanied by simultaneous active relaxation of the antagonistic group (Sherrington). By analogy, therefore, it is not improbable that constriction of the pupil through the third nerve should be accompanied by simultaneous active inhibition of the dilator, also carried out through the third nerve by means of inhibitory dilator fibres. And, indeed, Waymouth Reid (1895), from consideration of the electrical phenomena occurring during contraction of the sphincter, concluded that this actually happened. Anderson (1903), however, has brought forward strong arguments against this view. Thus, using bright light as a stimulus to contraction of the sphincter, it is found that the paradoxical dilatation may arise and continue for more than a minute in bright sunlight; and further, under the same conditions, a difference between the two pupils caused by paralysis of one dilator is not diminished but increased by brighter illumination of the eyes. Neither of these observations is consistent with inhibition of the sphincter through the third nerve.

The iris is not under the control of the will; hence the motor nerves are invariably set in action indirectly either by reflex stimuli or by what I shall call "synkinesis"—i.e., association with other voluntary or involuntary movements.[2] There are two chief reflexes and two chief synkineses or associated movements: (1) the light reflex; (2) the accommodation synkinesis; (3) the sensory reflex; and (4) the cerebral synkinesis.

The light reflex.—This is carried out entirely through the mechanism of the constrictor centre. Of the afferent paths we know very little for certain. The fibres are contained in the optic nerve and they arise from all parts of the retina. The optic nerve contains large and small fibres; it is possible that the large fibres are concerned with visual sensations and that some of the fine ones are afferent pupillo-constrictor fibres. The opposite view has also been advanced. It is certain that the pupillary fibres undergo partial decussation in the chiasma and enter the optic tracts. It is also certain that they do not enter the lateral geniculate body but leave the tract to pass by a path which is as yet conjectural to the third nucleus. The tone of the constrictor centre is kept up by constant afferent impulses along this tract: it is possible that it also possesses inherent tone. The tone is probably continually depressed by less effectual impulses along the fifth and other sensory nerves.

The accommodation synkinesis.—This is a constrictor effect commonly associated with accommodation. It is more nearly related, however, to the convergence which normally synchronises with accommodation, since it is possible to accommodate without inducing constriction of the pupil, whereas this invariably occurs during convergence. Very little is known about this phenomenon; even the views stated are open to doubt, but there can be no doubt that it is not a true reflex but a case of associated movement. The same remark applies to the well-known lid-closing phenomenon.

[2] The corresponding term for the association of ideas, or an associated idea, would obviously be "sympsychosis."

The sensory reflex.—This is a dilator reflex induced by tactile, pathic, and other sensory stimuli. It is a complex effect exhibiting a primary rapid dilatation due to augmentation of the dilator tone through the cervical sympathetic followed by a second dilatation rapid in onset but very slow in its disappearance due to inhibition of the constrictor tone. When originated through spinal sensory nerves the afferent impulses are carried up in the posterior columns of the cord.

The cerebral synkinesis is also a complex phenomenon and cannot be considered a true reflex. It is induced by psychic stimuli—e.g., fear, &c.—and also by concentration of thought upon a bright light or a dark room. It is also largely an associated movement, accompanying eye movements which may be themselves due to sensory impulses. The pure psychic reaction, entirely caused by ideas of light and shade, was described by Haab (1886), though Beer had long before discovered that he was himself able to alter the size of his pupils in this manner; it may account for some cases in which persons have apparently been able to alter their pupils at will. The phenomenon is unaccompanied by any obvious movement of the eyes and therefore cannot be called a synkinesis; it is, in fact, a *psychokinesis*. The reaction has recently been called in question by Bumke (1903) and it must be admitted that it is very difficult to exclude the many sources of error, of which accommodation is the most probable and difficult to avoid.

I propose now to discuss in detail my observations on the relationship of the cerebral cortex to the movements of the pupil, devoting such time as remains to the results of other recent researches.

Fontana, as long ago as 1770, showed that in the cat, even under the strongest light stimulus, the pupils dilated widely if the animal was frightened by a loud noise. A child's pupil can also be made to dilate, even during ophthalmoscopic examination of the macula, by a loud sound, such as clapping of the hands. Raehlmann and Witkowski consider that psychic impulses assist in maintaining the tone of the dilator centre, accounting for the constriction of the pupil during sleep by their absence. Schiff and Foa (1869) first stimulated the cerebrum by electricity and obtained dilatation of the pupils from stimulation of the anterior four-fifths, and of the cerebellum only by strong stimuli. They attributed the effect to the sensibility of the brain. Hitzig (1871) sometimes obtained constriction of both pupils, but generally dilatation; rarely only one pupil reacted. Similar experiments have been carried out by Bochfontaine (1875), Danilewski (1876), Luciani and Tamburini, Grünhagen, Bessau, Ferrier, Horsley and Schäfer, Schäfer, Beevor and Horsley, Grünhagen and Cohn, Katschanowski, François-Franck and Pitres, Mislawski, Bechterew and Mislawski, and Braunstein. In most of these cases the observations were incidental during research directed to some other object. In all dilatation was much more easily induced than constriction and no accurate localisation was effected.

Most observers have regarded the effects as inconstant and but little attention has been specially directed to them. Thus Ferrier includes dilatation of the pupil with salivation from the submaxillary gland, changes in pulse and blood pressure, and "other indications of general reverberation throughout the organism." He regards them as "merely complications and not as results of localised cortical stimulation." On the other hand, Bechterew and Mislawski conclude that "stimulation of the given regions of the cortex and of the optic thalami has hit off the central endings (Verlängerungen) of the cervical sympathetic" and that "the chief reflex centre for the secretion of tears lies in the optic thalami, and that there too are found the central tracts of the cervical sympathetic, their prolongations (Fortsetzungen) being continued thence to the cortex." François-Franck is careful to distinguish between two causes of dilatation of the pupil resulting from cortical stimulation. One is a special and localised effect following excitation of definite foci in the cortex and also obtained from excitation of the underlying fibres of the corona radiata and internal capsule. The other accompanies epileptoid convulsions resulting from stimulation of any and every part of the motor areas and is never obtained from the underlying white matter, which does not induce the epileptic state. To the latter he attributes the dilatation after administration of curare, which was observed by Bochfontaine. He perhaps lays too much stress upon this as a fundamental distinction, for it applies equally to other motor effects induced through the cortex.

I have not paid much attention to any movements other than those of the eyes and pupils. Dilatation of the pupils is often obtained without any movement of the eyes or body. I have usually found that a slightly stronger stimulus is necessary to evoke it than that which is required to produce movement from excitation of the arm or leg areas, or the same strength of stimulus may suffice if the animal be slightly less under the influence of the anæsthetic.

(*a*) *Cat.*—In the cat dilatation of the pupil can be obtained from a considerable area in the neighbourhood of the crucial sulcus and from a considerable area of the occipital region. As the result of many experiments it is found that the mesial surface of the hemisphere near the crucial sulcus (prorean and presplenial convolutions) gives the most marked effect, but I have also found that the anterior part of the third or median convolution (coronal or anterior supra-Sylvian) gives a very constant effect. In one or two instances there was a transitory constriction of the pupils before the dilatation from this area. Ferrier obtained constriction of the pupils and divergence of the eyeballs from this spot in the dog but I have not observed the latter effect in the cat.

My experiments were made principally upon cats; a few dogs and one monkey were also used. The animals were anæsthetised with ether, the degree of anæsthesia varying, but always being amply sufficient to cause insensitiveness to pain. The qualifying terms used apply to the condition of excitability of the motor areas of the cortex to stimuli of moderate severity, as shown by movements of the limbs of the contra-lateral side. "Epileptoid convulsions" is the term used to express the violent general movements which often follow stimulation of the motor area after exposure of the brain to air or prolonged or frequently repeated excitation. This condition is quite compatible with complete anæsthesia. The cervical sympathetics were either cut or isolated on one or both sides. In the dog the vago-sympathetic was treated as a whole. This was also done sometimes in the cat to insure the complete division of all sympathetic fibres. In some experiments the superior cervical ganglion was extirpated to eliminate any dilator fibres which might reach the ganglion by any hitherto unknown course. Section of the sympathetic was usually followed by a distinct moderate constriction of the corresponding pupil but this was certainly not invariably the case. Absence of a tonic dilator influence is probably in these circumstances due to the condition of anæsthesia of the animal. I need not enter into further details of the operative procedures, which were those usually employed in cerebral physiology. It was important to keep the light falling upon the eyes as constant as possible throughout the experiment. It is easy in the cat's eyes to direct one's attention to the horizontal meridian. The constricted pupil being a vertical slit, the distance from the centre to the periphery can be divided into four imaginary parts, the pupil being said to be a quarter, a half, three quarters, or fully dilated.

In the occipital region what may be called the focal spot is in the posterior part of the third or median convolution (posterior supra-Sylvian convolution). I have not observed any constriction of the pupil here, as described by Ferrier. François-Franck, however, obtained a transitory constriction from this spot, followed by dilatation, exactly like that which I describe for the coronal gyrus. It is therefore probable that there are foci for pupil-constriction both in the frontal and occipital areas but that they are masked by the dilator effects which are much more readily produced. One may compare with this the greater representation of lateral eye movements over any other eye movements in the cortex.

Only the results which are deduced from a large number of carefully planned experiments can be considered trustworthy, more particularly in deciding between areas which give a positive result independently of epileptoid convulsions. These are very readily brought about by repeated excitation of the same or closely neighbouring areas owing to the increased excitability of the cortex which is thereby induced. The condition of anæsthesia is also of the utmost importance. If this is deep the pupils remain immobile. If it is too light dilatation is obtained from almost every part of the cortex, at any rate when bodily movements occur. The results are only reliable when the anæsthesia is moderate.

(*b*) *Dog.*—The areas are very much the same in the dog as in the cat. This animal is less suited for the purpose because of the rarity of dogs with light-coloured irides, and a round pupil is less easy to detect slight variations upon than the slit-like one of the cat. In the dog I obtained a very marked effect from the precrucial gyrus, but I failed to observe any convergence of the optic axes as noted by Ferrier.

(*c*) *Monkey.*—I have done only one experiment of this nature upon the monkey. I found it much the easiest animal to work with and it gave very definite results.

I conclude from these experiments that previous section of the cervical sympathetic diminishes the effect but by no means abolishes it. When both cervical sympathetics are intact the dilatation of the pupil when well marked is accompanied by all the usual effects of excitation of the nerves themselves—viz., retraction of the nictitating membrane, widening of the palpebral aperture, and projection of the eyeball; to these Bechterew and Mislawski add secretion of the lacrymal gland, but this I am unable definitely to confirm. All these effects are abolished by previous section of the sympathetics except the dilatation of the pupils, and this is diminished. Whereas when the nerves are intact full dilatation of the pupils may occur, especially during epileptoid convulsions, after they are divided the pupils rarely become more than three-quarters dilated. The effect is very well seen if one nerve is divided, the other being intact. In this case the two pupils move synchronously and apparently to the same extent, except that they start unequal, the one on the divided side being the smaller. François-Franck is therefore certainly wrong in asserting that the pupillary dilatation is unilateral if one sympathetic has been cut. He certainly admits a slight degree of dilatation, which he attributes to dilator fibres running another course, probably in the trigeminal. I have eliminated this possibility by dividing the fifth nerve intracranially and still obtaining the undiminished effect. To eliminate the possibility of other dilator fibres reaching the superior cervical ganglion I have, as already stated, extirpated it. The pupil on the side from which the ganglion was removed was slightly but appreciably smaller than on the side on which the vago-sympathetic was cut.

I have found that section of the third nerve intracranially after previous division of the cervical sympathetic causes the pupil to become immobile, about three-quarters dilated. Stimulation of the cortex has then no effect upon it. Complete section of the corpus callosum has no effect upon the result of exciting the cortex. The bilateral effect is therefore not due to the stimulus acting through the opposite cortical areas but to its acting upon lower centres, but whether the optic thalami, or the superior colliculi, or the subcollicular nuclei I am not prepared to say, but probably upon the last mentioned. Stimulation of the anterior and posterior parts of the corona radiata and internal capsule containing the fibres derived from the cells of the frontal and occipital area leads to bilateral dilatation of the pupils. I have generally found a stronger excitation necessary, but this may be due to the fact that stimulation took place at the end of prolonged experiments. In one case I obtained a very marked constriction of the pupils with strong convergence of the eyeballs from stimulation of the posterior part of the internal capsule.

A point of great interest arising from these experiments is the question of the mechanism whereby dilatation of the pupils can occur in the absence of the usual dilator tract. Two explanations offer themselves—viz., inhibition of the tonic action of the third nuclei and dilatation brought about by vascular changes in the iris. An extremely interesting observation by Sherrington may be mentioned in this connexion. In bringing physiological experiment to bear upon current theories of the emotions, he performed "appropriate spinal and vagal transection" in the dog to eliminate "the sensation of all the viscera three-quarter muscles below the shoulder." He says: "The eyes were well opened, and the pupil distinctly dilated in the paroxysm of anger. Since the brain had been by transection shut out from discharging impulses via the cervical sympathetic the dilatation of the pupil must have occurred by inhibition of the action of the oculo-motor centre." It is said that after the optic nerves have been cut dilatation of the pupil is not obtained upon section of the third nerve, and hence tonic action of the third nuclei has sometimes been denied. There can be no question, however, that it exists when the optic nerves are intact, as in my experiments. The immobility which follows section of both the third and the sympathetic is strong evidence in favour of the inhibition theory. It must

be noted, however, that the blood pressure was probably very low at this stage of the experiment.

We have seen that dilatation of the pupil is still obtained after section of the sympathetic. No vaso-motor fibres are known to run to the iris except by way of the sympathetic, and even if such exist the experiments of Langley and Anderson tend to show that vascular effects are inefficient to bring about the dilatation observed. Moreover, it is well known that changes in blood pressure may occur from stimulation of various parts of the cortex, whereas pupil dilatation only occurs from certain localised spots in the absence of the epileptoid state. It seems justifiable from these considerations to regard the effect as another example of direct inhibition of the oculo-motor nerves from the cortex.

There is no lack of evidence as to the presence of fibres connecting the cortex with the mesencephalon and some of these must be regarded as the ones concerned in the pupillary effects. We may leave out of the question the dilatation of the pupil which accompanies the epileptoid state, for this is undoubtedly of an extremely complex nature, requiring special investigation. Confining our attention to the more specialised results obtained from the oculo-motor area in the posterior part of the frontal convolutions which are to be looked upon as part of the fronto-parietal motor or kinæsthetic area and quite distinct from the more anterior or so called prefrontal area, and to the results obtained from the oculo-sensory or visual area in the occipital convolutions we find definite anatomical connexions with the lower centres.

The pallio-tectal or cortico-mesencephalic system of fibres has recently been thoroughly investigated by Dr. C. E Beevor and Sir Victor Horsley. It is noteworthy that no fibres were found passing to the mesencephalon from the frontal region—i.e., from the area of cortex in front of the excitable cortex. From lesions of this part there was marked degeneration of the fronto-thalamic fibres previously described by Déjerine; the only mesencephalic centre to which fibres could be traced was the upper or anterior part of the locus niger. No fibres, therefore, go to the tectum. A large number of fibres could be traced from the excitable cortex to the corpora quadrigemina and mesencephalon, especially to the superior colliculus. This was very marked in the cat, much less so in the monkey. The fibres from the oculo-motor areas have not yet been specially investigated.

The results from lesions of the occipital lobes were particularly striking and confirmed Edinger's researches on birds. In proportion as more of the area of the cortex containing Gennari's streak is involved in the lesion the number of degenerated fibres passing to the colliculus increases. The fibres are large and stand out distinctly from the medium-sized occipito thalamic and occipito-geniculate fibres and from the small callosal fibres and fine collaterals which enter the corona radiata in large numbers. Some of the occipito-tectal fibres pass among the fibres of Gratiolet's radiation, others run through the mesial region of the inferior longitudinal bundle. All the fibres are distributed to the whole breadth of the stratum griseum profundum of the superior colliculus. Which of these fibres are concerned in the pupillary phenomena, and whether they pass, any of them, directly to the superior pupillo-dilator centre or to the pupillo-constrictor centre, or only by intermediate connexions, must be left for future research to determine. I have already shown that the cortical pupillo-dilatation is a complex event, strikingly resembling the ordinary sensory dilator reflex in that it is accompanied by all the usual effects of stimulation of the cervical sympathetic as long as that path is intact, but that it also occurs, deprived of the other sympathetic effects, when this nerve is divided. The evidence is therefore in favour of a more circuitous course, or at any rate of multiple and complicated interconnexions.

There is evidence that pupillo-constriction can also be elicited from stimulation of the cortex. Ferrier obtained it from stimulation of the anterior and posterior limbs of the angular gyrus in the monkey, but this observation is probably incorrect. I have already stated that I failed to confirm the same observer's result from the third external or coronal convolution in dogs. In pigeons Ferrier found intense constriction of the pupil from excitation of the middle of the convexity of the hemisphere. Schäfer obtained marked constriction of the pupil from stimulation of the quadrate lobule in monkeys. This brings us to the consideration of the exact nature of the phenomena. The view of Bechterew and Mislawski that we have here the central prolongations of the cervical sympathetic is, *a priori*, highly improbable, or, at any rate, a misleading explanation of the results; indeed, the continuance of the dilatation after section of the cervical sympathetic proves that it can only be partially true. So, too, it is unlikely that we are dealing with "centres" for the pupils in the ordinary sense of the term. We have found that the effect is most specifically obtained from the areas which are most concerned with ocular movements whether from the motor or the sensory side; moreover, it would seem that the effect is indissolubly connected with those movements and does not occur in their absence, hence it is most reasonable to conclude that the phenomenon is an associated effect. As regards the so called sensory areas—i.e., the visual centres in the occipital cortex—it is probable that the attention plays some part. We produce, by artificial excitation, some strong but probably ill-defined visual sensation which arouses the attention and leads to the appropriate movement of the head and eyes towards the direction from which the stimulus seems to proceed. The sensation is strong and sudden and is accompanied by dilatation of the pupils in no physiological sense other than the expression of emotion.

THE EPIDEMIOLOGY OF ENTERIC FEVER AND CHOLERA IN HAMBURG.[1]

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IN order to understand aright the epidemiology of enteric fever and cholera in Hamburg it is necessary to have a clear picture in one's mind not only of the topography of the town but also of the topographical arrangement of the surrounding district, for the reason that the particular conditions of our locality are in a special manner favourable to the diffusion of enteric fever and cholera from the town to the country and from the country to the town. Hamburg, as you are aware, is situated in the great North German lowland, which is of diluvial origin, made up of glacial drift, sand, clay, gravel, and erratic boulders, scattered pell mell, overlying the tertiary formation, and in many places rising like a plateau to a height of 50 metres and more above the level of the sea. This formation, which is, comparatively speaking, poor in water, is termed by us the "geest." At the sea-coast and mouths of rivers lies the alluvial formation, "the marsh," which extends in front of and beyond the "geest." It is, however, only met with in those parts where there are an ebb and flow—that is to say, only at the North Sea, not at the Baltic. These marshes consist of the sediment deposited by large rivers which empty themselves sluggishly into the sea by wide mouths. It is only through the activity of man in building "dikes" or embankments that they are made habitable and secure against floods. In some places they form islands between numerous water-courses; in others they form a wide boundary to the "geest," covering miles of flat expanse at sea bays and mouths of the river. Hence it is clear that the part of the estuary of the Elbe, as far as above Hamburg, once formed a deeply indented bay (Fig 1 gives a picture of these conditions). The marshes are very damp and are intersected by numerous drains which at low tide empty themselves into the river by means of sluices. A somewhat larger drain which flows parallel with the embankment goes by the name of the "Wetterung." The dwelling-houses lie on the inside of the embankment, between it and the "Wetterung," at irregular intervals, in even rows, extending for miles. The fertile land lying behind is used for feeding cattle and growing vegetables.

As naturally follows from such an arrangement of the houses, every kind of refuse from the dwellings, cattle-stables, and dunghills very easily finds its way into the "Wetterung," which at the same time is used for drinking and domestic purposes. For all water from the marsh wells contains so much iron that it cannot be used for drinking purposes. And in cases where the "Wetterung" is not

[1] A paper read before the Epidemiological Society on March 18th, 1904.

used water is taken from the river outside the embankment, which also cannot be regarded as free from pollution. Those houses are best off that collect rain water from the roof in underground cisterns. You can understand that, in such circumstances, grave insanitary conditions easily arise, although the people in many of the marsh districts are often of almost "Dutch cleanliness." When enteric fever occurs in these districts it can only be stamped out by slow degrees and with much difficulty. In former times it never died out altogether. When the people of Schleswig-Holstein spoke of marsh fever they usually meant enteric fever and not malaria. Such infected marsh villages are at the present day also the source whence the disease is being continually re-imported into the town, especially when these villages are close to a big town, such as Hamburg, with which they keep up regular intercourse in pursuing their market trade, bringing all kinds of goods to the town, more particularly articles of food which have come in contact with infected water in the "Wetterung" and are consumed in a raw state. Mention must first of all be made of milk, which is conveyed in vessels which have been previously cleansed and washed in marsh ditch water; further, different kinds of vegetables, salads, radishes, and fruit, which are probably stored in the drains (or ditches) to keep them fresh till market day.

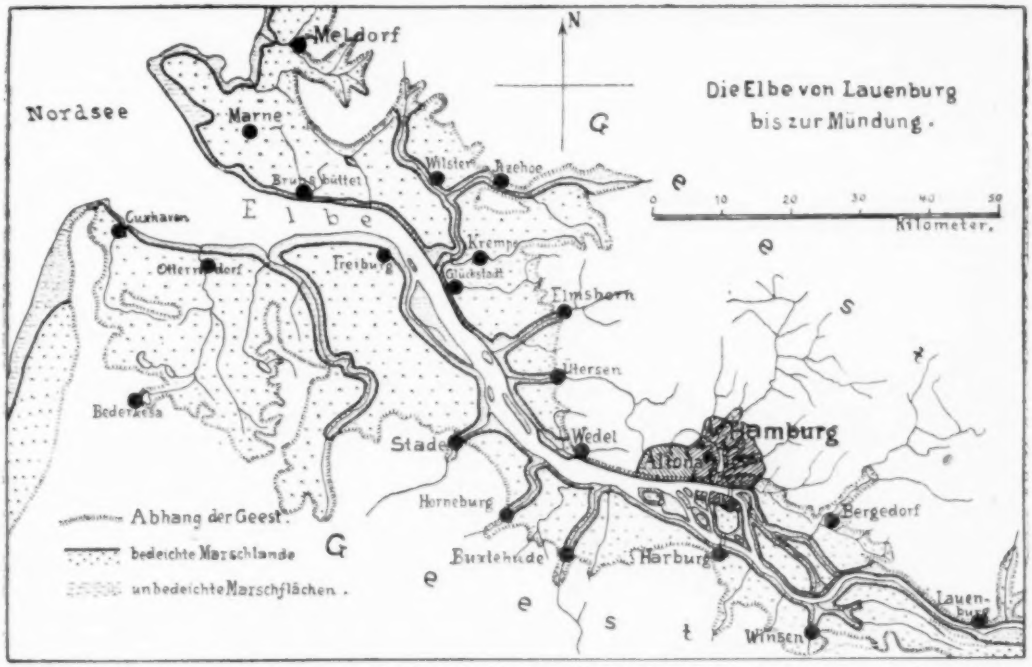
In bringing forward these circumstances it is, of course, not implied that the "geest" is altogether free from enteric fever. There, too, the disease may be imported, the wells infected, and from them in its turn the milk also. Still, such cases are much rarer there and when they occur are more localised and therefore easier to suppress. Moreover, in the course of time decided improvements have been made in the marsh, particularly by the improvement of the water-supply. This has been effected partly by teaching and introducing methods to free the water of the different wells from its iron, thereby making it usable, and partly by the establishment of central water-supplies from deep-bore wells giving very good water. In addition to this various precautionary measures in connexion with the position of privies, dung-heaps, and slaughter-houses, with the handling of milk and other articles of food, have contributed to the improvement of the sanitary conditions of the district. Still, there can be no doubt that the marsh villages, in spite of all precautions, are continually running risks and are at the same time a constant source of danger to the town.

I believe that in this country also you have small districts at the mouths of the Humber, Trent, Ouse, &c., where the conditions are similar. Dr. R. J. Reece, in a report of August, 1903, to the Local Government Board, described the sanitary conditions in Thorne rural district exactly as we know them to be with us in our marshes. This state of things on the continent is not confined to the neighbourhood of Hamburg but exists also along the whole of the North Sea coast from Schleswig as far as Holland and Belgium. And with slight alterations the conditions in the towns situated in the marsh are the same as those in the country districts. Hamburg was founded by Charles the Great as an advanced seat for a bishopric among the heathen and was built on an elevation in the "geest," or high land, between marshy plains which were not banked in. But soon as temporal interests became more and more important (together with the spiritual interests) the buildings extended into the marshes. And the more the population turned its attention to commerce and shipping the more did the town extend in the direction of the stream into the marshes. Thus at the present day a considerable portion of the town lies in the marsh where houses may only be built after numerous props have been driven deep into the ground for support. These marsh portions of the town have developed from banked-in marsh islands called "Polder," and they are still intersected by numerous water-courses which in Hamburg go by the name of "fleete." They represent exactly the same thing as the "grachten" in Dutch towns or the canals in Venice, with the only difference that in the latter town there is no flowing fresh water but only the salt water of the Adriatic. These Hamburg navigable canals in former times received all refuse from the houses abutting on them and at the same time served as sources of water-supply. We have still old pictures showing this state of things. It is therefore pretty certain that the sanitary conditions in the town were formerly very unfavourable, although definite details are wanting. The danger was not suspected and the value of cleanliness was not recognised till the year 1831, when cholera came and opened our eyes, as well as those of the whole world, to the danger. It was then that your country took the lead, showing a good example, and teaching how towns might be kept sanitary by means of good drainage and good water-supply, and Hamburg was the first continental town to profit by your English experiences. In 1842 our town was visited with a devastating fire, lasting three days, laying in ruins a very considerable portion of it. It was then we turned to your countryman Lindley (who died only lately at a good old age) and he provided not only the newly-built parts of the town but also the remaining old parts of it spared by the fire with a general system of sewerage and a central water-supply, both of which were completed towards the end of the "forties." This was the beginning of improvement in the health of the city and I will show you later, from the curves of enteric fever and cholera, how favourably both measures have acted, in that they not only improved the drinking water but also led to a greater cleanliness in every respect—in house and yard, in kitchen and cellar, in clothing and care of person. We can thus account for the steady decline of tuberculosis in Hamburg since the great fire, to which fact Dr. H. T. Bulstrode recently drew public attention. Unfortunately, this steady progress in sanitation has not continued, because, as is well known to you—and as I am just going to show you in detail—the central water-supply had serious shortcomings.

Before entering on this important part of the subject I should like to speak shortly of the shipping conditions which greatly resemble the conditions in the country districts described above. In so doing I will except the sea going vessels which, as a rule, have good drinking water on board and the passengers and crew of which do not easily come in contact with the river water. But it is quite another thing with the river craft which come into Hamburg in great numbers from the wide river path of the Elbe and from the Oder and Vistula which are connected with the Elbe by means of canals. There are often as many as 800 and more of such large river craft in the harbour, each of which is manned by a family—a skipper with his wife and children and one or more hands. In spite of all precautionary measures and regulations on the part of the authorities those on board allow their dejections to go into the river from which they at the same time draw their drinking water. Although the habits and mode of living of these people are gradually improving yet they still leave much to be desired and you will understand of what importance it is to a town for the epidemiology of enteric fever and cholera when a very great number of such ships lie close together in its harbours. Naturally, similar dangers arise from the still more numerous small tugs, lighters, barges and boats, and from the numerous businesses and occupations carried on at the water's edge. Nevertheless, these take a secondary place in comparison with the dangers which arise from the river craft, because in all those other cases only men are occupied and that, too, only during the daytime, whereas here women and children are also concerned who have less discernment and who live day and night on the water and can easily, unperceived, take advantage of early morning and late evening to pollute the river.

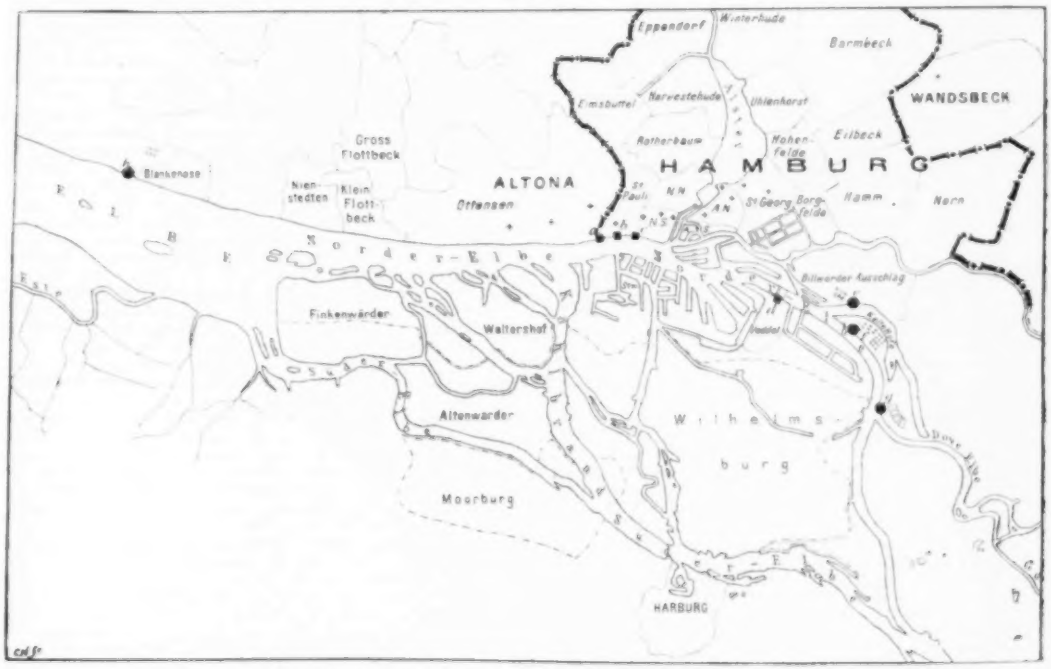
After this digression I return to the subject of the water service. The water for the central service was from the very beginning taken from above the town, where it was stored but not filtered. This was a marked improvement on the previous state of affairs, as at low tide the fresh water from the upper part of the river was taken in, and as even in high tide the river at this spot was not nearly so polluted as near the town and in the water-courses of the town, where it receives the unpurified sewage of the whole city. Nevertheless, the innate danger consisted in this: that in the case of a low level of water in times of drought, or in the case of spring tides raised higher by the winds, the tidal wave, which carries with it all refuse out of the harbours and sewers can come much higher up stream than is usually the case. Consequently, part of the polluted material from the town, although in a modified or rarefied form, might reach the intake and enter the pipes. This danger became gradually greater and greater, although the intake was taken higher up the stream. The town at the time of the fire of 1842 numbered about 160,000 inhabitants; in 1884 about 440,000; and in 1903, 740 000. In consequence, as time went on, more and more sewage was emptied into the Elbe; the town buildings and harbours extended farther up the stream, the shipping increased year by year, and regulation works were built, the object of which was to deepen the water way and to bring more water into the harbour for

FIG. 1



Map of the Elbe from Lauenburg to the mouth, showing (1) the boundary of the "geest" or high land (Abhang der Geest); (2) embanked marsh land (bedeichte Marschlande); and (3) unembanked marsh plains (unbedeichte Marschflächen).

FIG. 2.



Political boundaries of Hamburg. These coincide with the "water area."

ships with a deeper draught. All these circumstances contributed to allow sewage more easily and more frequently to make its way to the intake. Not till the introduction of the central sand filtration in 1893 were all these dangers at an end. I will not take up your valuable time with the details of the development of this state of things which passed through many stages and involved many battles, nor will I trouble you with the proposals to remove the intake still higher up stream. It might not even interest you. For the present purpose you have enough with what I have told you and with that which you can deduce for yourselves from the plan (Fig. 2). I should only like to add that the area of the piping of the water service coincides with the political area of the town. The political boundaries coincide exactly with the boundaries of the water service. On the east, the Prussian town of Wandsbeck, which at the present time has about 30,000 inhabitants, joins on to Hamburg without any visible line of demarcation. This town of Wandsbeck has waterworks of its own supplied from inland lakes in Holstein. On the west of Hamburg lies the Prussian town of Altona, with at the present time about 168,000 inhabitants, which, like Hamburg, gets its water from the Elbe. The waterworks which were built by your fellow countryman, Thomas Hawksley, during the years 1857–59, lie ten kilometres below the town and take therefore the river water polluted by the sewage from both large towns—Hamburg and Altona. Since the opening of the works in 1859 the water has been carefully filtered. Pipes from these works supply the town of Altona almost as far as the political boundaries of Hamburg. In Fig. 2 these boundary lines are shown very distinctly. It is interesting to observe how first one and then the other of the two water services were infected with enteric fever. In the case of the Hamburg service it might happen at any moment; in the case of the Altona service only when the filters were found wanting or when unfiltered water was pumped into the mains. Each of these mishaps occurred often during the first few years of working because the technical detail of filtering had first of all to be learnt and then put into practice, and also because, acting without knowledge of the hygienic dangers of unfiltered water from the Elbe, no care was taken to avoid supplying unfiltered water when repairs were being executed. At that time in the filtration of water attention was paid chiefly to the æsthetic purifying of it alone. In subsequent years all cases of failure in the efficacy of the filters are in all probability to be regarded as due to frost in hard winters. The water in the open filters freezes and the coating of ice makes it impossible to cleanse the top layers of the filtering sand, as is otherwise done at regular intervals by carefully removing the slimy layer which has been deposited on the sand and which in time stops up the pores of the filter. When a hard frost came as long as the better modern methods were unknown the authorities were obliged to use all kinds of extreme measures to make the filters pervious and very often the function of them was heavily damaged by those measures.

Here I show you two diagrams which represent the number of monthly attacks of enteric fever in Hamburg and Altona for the years 1883–85, calculated per 10 000 inhabitants. During these years we had in Hamburg different large epidemics of enteric fever which you will see occurred as a rule in autumn, if not in winter itself, and they repeatedly overlapped into the following year. Altona did not share in these epidemics, at the most only in so far as is easily explained by the close intercourse between the inhabitants of the two towns. But when the epidemic in Hamburg receded it began to increase in Altona (but much more severe, much more sudden, and rising to greater heights than in Hamburg), only to fall again very rapidly. Sometimes an epidemic would break out in Altona when none preceded it in Hamburg. This happened in the beginning of 1891 and 1892, while, *vice versâ*, there were epidemics in Hamburg which left Altona untouched—as, for example, in the autumns of 1889 and 1892. It cannot, therefore, be assumed that enteric fever always broke out in the low-lying Altona whenever Hamburg sent an unusually great number of enteric bacteria through the sewers into the Elbe. But we must conclude that the part of the Elbe running past these two towns was in a constant state of infection and that enteric fever broke out in Altona when the filters did not properly perform their functions owing to hard frost in January and February. On the other hand, outbreaks of enteric fever occurred in Hamburg when the water in the Elbe was low, in the autumn of dry years, which led to the tidal wave coming unusually far up the river, bringing with it, as far as the intake of the town waterworks, a large quantity of Elbe water polluted by enteric discharges. Such dry seasons occurred in the years 1885, 1886, 1887, and 1892; while, on the other hand, the dry season of 1883 brought with it no appreciable increase of enteric cases, for the reason that at that time an alteration of the river bed which was to shorten the path of the tidal wave was not yet completed. Only by these circumstances can we explain how it is that in these two towns, merging into one another without any definite line of demarcation, enteric fever ran such different courses. The epidemic in Hamburg, with a gradual rise and gradual fall, lasted nearly eight months; in Altona, with the exception of the winter 1887–88, the epidemic, in the form of severe explosions, lasted only one or two months and was at its height at a period several months later than in Hamburg. But in both towns the whole area of the water service was always attacked practically in the same way. From the drawing I show, which represents the state of things in the winter 1887–88, you will see how matters stood within the borders of Hamburg and Altona. On the left lies Altona territory, on the right Hamburg territory, separated by the characteristic boundary line. Below, the Elbe is indicated. Each of the 12 areas represents the state of affairs in series of monthly averages. You will see that in July, 1887, and June, 1888, at the beginning and end of the series, on both sides alike there was but little enteric fever: only from two to five cases per 10,000 inhabitants. Matters stand thus in Altona up to November, whereas in Hamburg the number of cases goes on increasing till in December it is at its height—26 per 10,000 inhabitants. Then comes the decrease, so that by March the same conditions are reached as in the preceding July. The very month Hamburg is free from enteric fever Altona is attacked most severely; likewise with 26 cases per 10,000 inhabitants, the increase in the number of cases beginning the preceding November. And exactly the same thing occurred in other winters up to 1893. Since then the central system of filtration has been introduced in Hamburg; and here, as well as in Altona, we have learnt to master the difficulties during the period of hard frost. Since that time large epidemics of enteric fever have not occurred in either town. But isolated cases of enteric fever have remained—viz., about three or four per annum per 10,000 inhabitants, from 200 to 300 cases, with, approximately, 30 deaths. Among these there may be many cases that are wrongly diagnosed as enteric fever, as diagnosis is not always very easy, and young medical men have no longer much opportunity of becoming acquainted with the disease. On the other hand, many slight cases may escape detection which are of no clinical interest and which are not recognised as enteric fever but which may nevertheless have been important factors in the spread of the disease.

Thus the number of reported cases may be approximately correct. Nearly a third of these can, as a rule, be shown to be imported, chiefly from North American ports and from small villages in the mountains or by the sea, where families go to recruit during the summer holidays, never heeding that in many of these places the sanitary conditions leave much to be desired. Another considerable series of cases can be directly traced to the Elbe; they concern skippers and boatmen on the river craft in the Elbe or workmen who work at the water side. Then we have had in some years groups of cases which, with more or less probability, could be traced to infected milk from a particular milk service or from one particular farm in the neighbourhood. Lastly, there are always cases which are obviously directly infected—for example, among sisters and brothers in small dwellings or among nurses in hospitals. After subtracting all these cases there still remain 100 or even more which cannot be traced to any known source of infection. Naturally, however, one can easily content oneself with the assumption that, considering the intercourse between the inhabitants of a large city, nothing is to be wondered at. The incubation period is from two to three weeks, so how can the person always remember how, where, or when he may possibly have exposed himself to infection or even judge whether he was in danger of infection or no; as, for example, when bathing in the Elbe, visiting such and such a house, or partaking of food and drink which, perhaps, came from a distance from an infected place, as in the case of oysters? But one may also ask oneself the question that has been asked by more than one person whether these few cases cannot be traced to the filtered Elbe water, as the

filters cannot be absolutely relied upon to keep back every germ. Sometimes it appears as if the number of cases of enteric fever in the town increased after the filtered water showed for a time an increased percentage of germs, just as is believed to have been observed in London. Sometimes, however, the comparison does not hold good. In my opinion (at any rate with us) this question cannot be decided statistically because the numbers involved are too small. The matter will not be solved till we have deep well water instead of filtered Elbe water in our water mains. Decisive steps towards this alteration in the water-supply have already been taken, and in two years' time we hope to be able to supply a third of our needs with deep well water. And I do not doubt that after this is accomplished the remaining two-thirds will follow in the not too distant future. What enteric fever then remains will certainly have nothing to do with the water-supply. Already now I should like to remark that several large towns of Germany supplied with deep well water have not less enteric fever than Hamburg.

After setting forth these considerations I will here show you a diagram representing the yearly number of deaths from enteric fever, calculated per 10,000 population, since the year 1840 up to the present time. I have omitted the figures for preceding years as they are too unreliable to be of any value. The number of fatal cases, however, must be taken instead of the actual number of cases as we only know the latter since the year 1872. In this diagram you will see that since the great fire of 1842 the prevalence of the disease has steadily diminished although interrupted by great fluctuations; and, further, that since 1894 the number of cases has been very few indeed. This favourable condition of things since 1894, and the gradual sinking of the curve since 1892, can be easily understood without further statement after what I have shown you up to this point. But how are we to explain the great rising of the curve in 1857, 1865, and 1889? This is a question on which many opinions have been expressed without any completely conclusive answer being given.

In this diagram over the columns representing the number of fatal cases of enteric fever per annum, I have given also the index of rainfall in millimetres as far as these numbers are known, and in the diagram showing the monthly cases, over the curve over the number of monthly cases, in addition to the average temperature curve, I have given the average level of the ground water for each month. Comparing the two representations you will see that the level of the ground water and rainfall are practically parallel—that is to say, that the level of the ground water is so much lower the less the rainfall is, and *vice versâ*. Further, you will see clearly that the great epidemics of enteric fever fall in dry years when there is a low level of ground water, whereas in very rainy years enteric fever obviously recedes. These observations agree in every respect with the celebrated observations of Pettenkofer of Munich. Explanation is as difficult as the facts are self-evident because the Pettenkofer explanation of facts clearly does not hold good after the importance of the part water plays in the diffusion of enteric fever, which was disputed by him, has now unquestionably been established. Most seductive of all is the assumption that dry seasons specially favour the transmission of enteric germs from the dejecta of enteric fever cases to the alimentary canal of other persons. Without entering upon many self-evident general reflections I may state that in the case of Hamburg this theory is supported by the fact that the explosive outbreaks in Altona occurred in the middle of the coldest part of the winter, a season which is usually regarded as being particularly free from enteric fever; and, further, these explosions obviously occurred because through the sudden disturbance of the process of filtration the hitherto impeded progress of the bacteria was made possible from the Elbe water (into which they had entered with the discharges of the patient by means of the sewage) to the alimentary canal of other persons. Is not the conclusion most obvious that similar mechanical circumstances also decided the course of the Hamburg epidemics? I have already tried to make this appear probable with regard to the epidemic of the "eighties" and I do not doubt but that similar mechanical circumstances—that is to say, high floods and a low level of water in the Elbe, both of which are favourable to the pollution of the water service with the contents of the sewers—had a decided influence on the epidemics of 1857 and 1865. But it is very difficult to sift such questions sufficiently thoroughly, because the average numbers referring to the monthly levels of the water of the Elbe, or the size of the flood, or the fatal cases of enteric fever, do not suffice to settle the matter. More must be known of the local spread of the disease in the town, of the different floods, and of the conditions of the stream at the time; facts which can no longer be ascertained. But the probability of the case seems to me to speak in favour of my theory, although it does not, of course, explain everything. I consider it a dangerous practice, and one to be avoided, to want to explain in a word the endless intricate workings of nature. I should like specially to emphasise the fact that dry seasons, in some way or other, seem particularly to favour infection by contact and the different indirect transmissions of infection in different houses by means of articles of food, vegetables, or flies. For in many places where periodic epidemics of enteric fever show a similarity with Hamburg there are no tidal ebb and flow and they cannot all be explained by the theory that dry years and seasons specially favour the pollution of wells. I should like to believe that in former times the latter circumstance played an important rôle, at all events in Munich. Whether, however, it can be applied in all cases, or whether altogether different circumstances do not come into consideration in the periodic outbreak of enteric fever, must remain an open question. In this respect we have still much to learn. In any case, you will see by my curves that since 1894, when the sanitary condition of Hamburg was improved, fluctuations in the rainfall and level of the ground water have no longer had any influence on the frequency of the outbreaks of enteric fever—just as is the case with Munich since the cesspools were either made impervious or done away with altogether and replaced by sewers which freed the numerous town wells from the pollution brought about by the pervious pebble subsoil from the privy pits.

And now as to cholera. Here I can express myself more shortly, as almost all that I have said about enteric fever can be applied to cholera which follows the same modes of spread as enteric fever. On nearly every occasion the disease has come to us by the same classical route that is characteristic for the whole of Germany. It spreads from Asia to Russia and then crosses the German frontier with the floating rafts travelling down the Vistula from Poland. From the Vistula it follows the navigable water-ways of the river through canals into the Oder and from this river enters the Havel and Spree again by canals and thence the Elbe. The "Oberländer" ships are always the first with us to be affected by cholera. It is only in exceptional cases that the route is a different one, as, for instance, was the case in 1892 when Hamburg was attacked before any other place in Germany. The disease then came probably by the sea route from Paris or Havre, in all probability with some ship's water ballast taken in at Havre harbour polluted by sewage. The diagram I show tells you about the outbreak of cholera in our town. The columns show the number of cases per 1000 inhabitants and the black parts the number of deaths. As you will see, the disease has visited us in Hamburg a good many times. The infection has never come to Germany without visiting us and remaining with us for a longer or shorter period. This can be easily understood from our relations to water and from the conditions of our marshes described above.

The great epidemic of 1848 was not, however, much less than that of 1832. But the sanitation of the town plays as important a part as it does in the case of enteric fever, and every succeeding epidemic has been less severe than the preceding one. In each of them the scene of action is principally on and near the water, or at least among that part of the population connected with the water. From these people the disease is spread further to other portions of the town, that is to say, to parts some distance from the water lying on the "geest" or high land, and to persons having no connexion whatever with the Elbe. Comparatively speaking Altona always escapes because its harbour is smaller and of very much less importance to the town than that of Hamburg is to the town of Hamburg, and because also the whole of the town of Altona lies high up on the "geest." When cholera does break out there it is near the Elbe. In the case of these Hamburg epidemics in former years, whether it is a fact that cholera germs also got into the water-supply cannot now be determined. It can hardly have been in any considerable degree on account of the local spread of the infection described above. On the other hand, something of the kind seems to have happened in Altona immediately after the opening of the new central water-supply in 1859. On August 4th of that year the

water service was inaugurated and it is a fact that at first the filters did not properly perform their functions. Soon afterwards the largest cholera epidemic Altona has ever known, with eight cases per 1000 inhabitants, broke out, spreading over the whole town. The information at hand is too scanty to enable us to do more than to surmise. In Hamburg, where the height of the epidemic was reached in July, there were then 10·5 cases per 1000 inhabitants. In the epidemic of 1871 matters were already very much clearer. There was at that time a slight outbreak in Hamburg, beginning in August, with 0·5 case per 1000 inhabitants. A little later Altona was attacked. The first cases occurred on August 19th, after unfiltered water had been delivered by the service pipes from August 11th to 18th. But the number of deaths was three times as great as in Hamburg—namely, 1·43 per cent. as opposed to 0·43 per cent. in Hamburg. The medical authorities of Altona at the very time of the outbreak attributed this epidemic to the water service and publicly expressed their opinion.

The importance of all these earlier observations on the diffusion of cholera and enteric fever by means of the water service of the two towns was not thoroughly understood and appreciated till the great cholera epidemic of 1892 broke out in Hamburg, teaching a lesson which could no longer be misunderstood. The essential characters of this epidemic are well known to you, so I can confine myself to following a few points. There were 26·42 cases per 1000 inhabitants and 13·44 per 1000 deaths, whereas in Altona these numbers were 3·81 per 1000 and 2·13 per 1000 respectively, and in Wandsbeck still less—namely, 3·06 per 1000 and 2·09 per 1000. Among the Altona cases were a large number of persons who were infected in Hamburg. The boundaries between these two so widely differing infected areas follow closely the political boundary which, as before stated, coincides exactly with the boundary of both public water-supplies. To illustrate this fact I once more lay before you the well-known plan (Fig. 3) from Gaffky's description of the epidemic within the borders of Hamburg and Altona, in which plan appears the total number of cholera cases and deaths. At the bottom, to the east, you will see the streets of Hamburg thickly studded with cholera cases. At the top, to the west of the boundary, you will see the streets of Altona with only very few cases, a large number of which were imported from Hamburg. On the Hamburg side the whole area as far as the water service reaches was attacked simultaneously in the same way, whether it was the "geest" or marsh that was concerned, or whether the portions of the town were near to, or far from, the Elbe. This is a fact which must effectually refute the earlier theory that the marsh was attacked first by the disease, because the subsoil here consists partly of organic materials intermixed with human dejections. The marsh was attacked first in former times only because it lay nearer to the water and because the water from the polluted marsh ditches and "Wetterungen" was used for drinking purposes. Now all at once the "geest," which was scantily supplied with water and which had hitherto been almost free from the disease, was attacked as severely as the marsh because, through the water service, infected water was brought also into these more distant parts of the town, built partly on pure sand, only the year before.

The same circumstances explain how numerous cholera cases imported from Hamburg into the marsh districts near the Elbe gave rise to new small groups of cholera cases; whereas in the "geest" villages, provided they lay far from the river, there was no spread of the disease worth mentioning. Further, the temporal course of the epidemic too is very characteristic of the infection of the water-supply. On August 16th the first cases occurred near the Elbe; on August 21st we had about 100 cases, and on August 27th more than 1000 a day. No previous epidemic had ever been of such an explosive character, a fact which is better explained by the diagram which I now show than by any verbal description of it. The diagram represents the weekly course of the different big cholera epidemics in Hamburg, not in absolute numbers, but calculated for each week, per 1000 population, so that the different diagrams can be easily compared with one another. Not even the fairly suddenly arising epidemic of 1848 can be compared with the short, stormy course of that in 1892. This epidemic, which attacked 16,850 persons and killed 8576, was followed in 1893 by another smaller outbreak, which could again be traced to the water service. The water was filtered by this time, but under pressure of circumstances the year before the work had been hastily brought to a termination and set in operation. It was therefore possible that unfiltered Elbe water from without entered the conduit conveying the filtered water from the filters to the pump and mingled with the filtered water. It was not till some days had elapsed that the damage was discovered and the matter immediately put right. But it had sufficed once more to introduce cholera bacteria into the town, although fortunately only in small numbers. 202 persons were attacked and 60 of them died. Since then Hamburg, like the whole of Europe, has been free from cholera. Should the disease reappear, epidemics such as we have had in the past are out of the question, provided very unusual and improbable circumstances in connexion with the waterworks do not arise. But after what I have told you about enteric fever we

FIG. 3.

Spot map, showing the distribution of cholera on the borders of Hamburg and Altona in the four months August–November, 1892.

shall never feel quite secure against cholera. For Hamburg's close connexion with the river, the navigation, and the numerous small water-courses, offer enteric fever and cholera only too many opportunities of introducing themselves into the town. We shall, however, be better able to cope with a case of cholera than with isolated cases of enteric fever, because as a rule diagnosis is easier and the incubation period much shorter and because it is easier (during the short months of the danger from cholera, which occurs for some months' duration every ten years or less) to direct the attention on this one point than to carefully observe year by year every isolated case of enteric fever.

That, gentlemen, is roughly the epidemiology of enteric fever and cholera in Hamburg, considering each disease separately. What relation do they bear to one another? Past experience has already taught us that enteric fever and cholera epidemics repeatedly coincide with one another, which is not to be wondered at in face of the great similarity of their modes of spread. Not only do both seek out similar localities in which insanitary conditions exist in connexion with the excrement disposal and the water-supply, not only are both associated in their spread with water, but also dry years and dry seasons with low level of subsoil water are favourable to the development of both diseases. It must, therefore, necessarily follow that when cholera breaks out in a locality enteric fever, which is usually indigenous there, seizes the same opportunity for further development. In Hamburg it has been repeatedly observed what a peculiar interest attaches to those years in which both diseases were disseminated simultaneously side by side throughout the town by means of the water-supply. At those times enteric fever broke out from two to three weeks later than cholera, corresponding to the different lengths of the period of incubation. This was established conclusively in 1892 and 1893. And a similar connexion exists also between these two diseases and choleraic diarrhœa. Choleraic diarrhœa, together with other causes, is brought on after a very short incubation period by drinking water polluted with sewage. In this connexion the best-known example is the illness caused by the consumption of oysters which have come from oyster-beds situated in the neighbourhood of town sewage outfalls. Some persons are attacked by choleraic diarrhœa soon after eating infected oysters, others fall victims to enteric fever a fortnight or three weeks afterwards, and some suffer from both. Dr. Bulstrode, in a very carefully written report, has lately described such occurrences at Winchester and Southampton. We ourselves made a similar observation in 1893. A great shipbuilder's yard supplied its workmen with Elbe water purified in a filter-bed of its own. At the beginning of August the whole of the filtering material was taken out, cleansed, and put back again. In so doing the filter was rendered very inefficient. A few days later over 100 workmen fell ill with choleraic diarrhœa in a more or less violent form, and after some time in 19 of the persons pronounced enteric fever developed. In the same way it can be explained how it is that in the more recent great enteric fever and cholera epidemics in Hamburg, which have been more narrowly observed, there has always been a large number of infants who died from choleraic diarrhœa who certainly suffered neither from cholera nor enteric fever, and that since the introduction of a central system of filtration of the drinking water in Hamburg a decrease of from 1000 to 2000 deaths occurred annually among infants. Although at present we do not know the origin of choleraic diarrhœa, nevertheless, according to these observations, it is certain that in association with the unboiled water used for diluting the milk or for washing out the milk-pans it gets into the intestine of the child and here develops its harmful action. We have also some observations from Berlin, from the district of the Stralaus waterworks, between the years 1886 and 1893, showing that every time the number of germs in the water-supply increased to an abnormal extent the number of deaths among infants increased in the same proportion.

Thus in the war which we have been waging against cholera and enteric fever, we have, by the introduction of a purer water-supply, at the same time overcome a third enemy—viz., choleraic diarrhœa. Here, gentlemen, I come to the end of my dissertation, which has left untouched many important aspects in the epidemiology of enteric fever and cholera, and in which I have been obliged to avoid all numerical statistics. However, I hope that the few points which I have brought forward have proved of interest to you and have been welcome as a contribution to the studies to which your society has dedicated itself.

THREE CASES OF RENO-RENAL REFLEX PAIN:

CASES IN WHICH THE SYMPTOM POINTED TO THE SOUND KIDNEY BEING THE DISEASED ONE.

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SPONTANEOUS pain is an important symptom of renal disease when the outflow from the pelvis is in any way interfered with, and probably in no organ of the body is the suffering more acute and more varied in character than in some of the maladies affecting the kidney and the ureters. During an attack of renal colic the pain generally extends over a wide area, involving most of the abdomen and back. But while widely distributed it is generally most severe on the affected side, between the level of the tenth rib and the crest of the ilium. Its character and situation vary according to circumstances and may often guide the surgeon in forming an opinion as to the nature of the lesion giving rise to the suffering. When obstruction to the ureter is present the pain may extend down the thigh to the knee, involving all the pain areas from the tenth dorsal to the second lumbar, whereas when a stone is impacted in the kidney it will cause little suffering when the patient is at rest but when he exerts himself or is submitted to sudden jolting, pain is developed in the ninth and tenth dorsal areas. The feeling may only amount to a sense of uneasiness or discomfort, it may be a dull or gnawing pain, it may be very acute at times or may reach to a degree to be described as lacerating torture, accompanied by agonising spasms. The suffering may be of short duration, with intervals of complete freedom from pain, or it may be persistent. The less severe pains, as a rule, continue steadily in their course and are located in one place, while the more acute pains are generally remittent and extend over considerable and constantly varying areas. Dull persistent pain in most cases indicates a slow, steady change in the condition and bulk of the renal parenchyma or in the size of the pelvis, as is seen in tuberculous nephritis and in tumours; on the other hand, acute suffering is due to lesions which suddenly interfere with the exit of urine from the pelvis—for example, in calculus, in tuberculous pyelitis, or ureteritis, or in obstruction from the impaction of a blood clot. When the pain is acute it is not always referred to the seat of the disease but may cause spasm of the bladder, pain in the testicle, at the point of the penis, in the hip-joint, down the thighs, or the suffering may be limited to the kidney on the opposite side to the one that is the seat of the disease.

This reno-renal reflex pain has been described by Guyon and Thornton and considerable importance has been attached to it by these writers; while, on the other hand, Morris in his recently published book on "Surgical Diseases of the Kidney and Ureter"[1] says: "It is important to know that a stone in one kidney will sometimes excite sympathetic pain and irritation in the other; but this transferred or sympathetic pain is of an aching character, not of a spasmodic or colicky description, is only occasional, and never occurs except as an accompaniment of more severe pain on the affected side. So far as my own experience and researches go, there is not a single case which affords satisfactory evidence of symptoms on one side only being caused by a stone in the kidney of the other side. The presence of a stone in the painless kidney is not proof that the painful opposite organ is not also affected. That the attacks on the painful side have ceased after removing a calculus from the painless kidney is not conclusive; this may be nothing more than a coincidence, due either to the accidental shifting of a calculus in the painful kidney, or to the calculus becoming lodged in some immovable manner. There may be very advanced disease of the kidney on the painful side and a symptomless calculus

[1] Surgical Diseases of the Kidney and Ureter, vol. ii., p. 84.

in the opposite kidney. In a case which has been under my care of late there was a sarcomatous growth in the right kidney with hæmaturia, but an entire absence of pain and tumour on the right side throughout the whole course of the disease; yet intense pain was experienced in the left renal region radiating over the left side only. The inference would have been that this was a typical case of reno-renal reflex pain had not symptoms during the last few weeks of life and a post-mortem examination shown that the left-sided pain was due to a similar new growth involving the left transverse processes and the left side of the bodies of the lower dorsal vertebræ. I consider the doctrine of reno-renal reflex with an absence of pain in the affected kidney as unproved and unsound and if acted upon in practice likely to lead to very serious and dangerous results."

In a communication which I published in the *Glasgow Medical Journal*[1] I tried to show that my experience led me to believe that reno renal reflex pain is a fact which must be accepted and in proof of my opinion I cited the following cases, one under the care of Mr. A. E. Maylard, a second published by Mr. Edmund Owen, and a third which was under my own care, and in addition to those I have three others which demonstrated beyond doubt that reno-renal reflex pain is a fact which must be accepted. The following is from the article in the *Glasgow Medical Journal*:—

W. I., æt. 58, consulted me on the 25th May, 1899, with a history of dull pains in the left lumbar region during the last seven years and of acute attacks of renal colic at intervals of from two to three months. These attacks were usually brought on by active exercise or by driving and were accompanied or succeeded by hæmaturia, which usually lasted for some days after the pain passed away. The patient was sent into the "Central Home" for examination during one of these attacks and on exploration with the cystoscope blood was seen to flow from the *right ureter only*. This was observed on several occasions. I therefore advised exploration of the right kidney but the patient was so convinced that the disease was on the left side that he would not consent to an operation being done.

Mr. A. E. Maylard has kindly given me the following account of a somewhat similar case which came under his observation:—

D. M., aged 38, had complained for six months of a "nagging" sort of pain in the right iliac region which seemed to him to pass upwards and lodge in his right lumbar region where it produced a dull, sickening sensation. It would linger there for 24 hours, causing him during the time to vomit and making him at the end of the attack feel very weak. He had four bad attacks of acute iliac and lumbar pain. Immediately after one of these attacks the urine was found to contain a quantity of albumin, red blood cells, but no tube-casts. In the course of a few days the urine returned to the normal. Frequency of micturition was never a symptom.

Believing the case to be one of renal or ureteral calculus on the right side the kidney was explored and a ureteral catheter passed from the pelvis of the kidney. Nothing was, however, detected. The patient had complete suppression of urine after the operation which continued till his death on the fourth day.

The kidneys, examined after death, showed the right one—previously explored by operation—to be healthy and the left to contain a calculus about the size of a pea in one of the upper calyces (March 6th, 1901).

A very interesting case is reported by Mr. Edmund Owen (*British Medical Journal*, June 8th, 1901, p. 1385), in which the pain was limited to the right side. The right kidney was explored with a negative result and at a subsequent operation a large phosphate calculus (400 grains) was removed from the left kidney. Commenting upon the case the author remarks: "I am well aware that it is not a very unusual occurrence for a surgeon to operate upon the wrong kidney in his search for a stone; but I do not think that a more conspicuous instance than this of the untrustworthiness of the subjective symptom of *pain* in renal calculus is likely to be forthcoming. Subjective signs are proverbially untrustworthy through the whole range of surgery; but in the case of the kidneys which have drawn their nerves blindfold from the epigastric pool it is small wonder if, in the absence of objective signs, patient and surgeon are sometimes led by them to make mistakes."

CASE 1. *Pain simulating renal colic on the left side of five years' duration, other symptoms and signs pointing to calculus in the right kidney; stone removed from the right kidney.*—A woman, aged 25 years, consulted me in July, 1900, complaining of severe pain in the left lumbar region which had been present more or less since 1898. The attacks of renal colic lasted, as a rule, from three to nine hours and were associated with suppression of urine. In the more prolonged attacks the pain extended over the whole abdomen and back, but the area of greatest intensity was in the left lumbar region. The pain generally subsided suddenly and was followed by a copious excretion of dilute urine. Physical examination of the abdomen was difficult on account of the patient being unusually stout for her age and muscular resistance being very marked during an attack of colic, but neither during the attacks nor in the intervals could any renal swelling be detected and pressure over the two organs failed to reveal greater tenderness over the one than over the other. Prior to consulting me the patient sought advice from a surgeon in London who came to the conclusion that she was suffering from a calculus in the left kidney and advised an operation for its removal. At the onset of the illness the attacks of renal colic seldom occurred oftener than once in two or three months, but by midsummer, 1902, she was seldom free from gnawing pain in the lumbar region and the attacks of renal colic were more frequent, sometimes as often as once a week, and associated with occasional hæmaturiæ. In the intervals between the attacks no abnormal constituent could be found in the urine with the exception of occasional slight deposits of pus, but during the attacks of hæmaturia blood was found to escape from the right ureter only. No tubercle bacilli could be found. Cystoscopic examination revealed nothing abnormal in the bladder with the exception that the mucous membrane around the right ureteral orifice was unduly injected and the lips of the orifice were ragged and projecting into the bladder. A ureter catheter was passed and also an examination was made by sounding the ureters with a resonator probe. Neither from the catheterisation nor from the sounding was any definite information acquired but the cystoscope showed the kidney from which the blood was flowing. While the pain pointed to the presence of a stone in the left kidney the appearance of the bladder and the circumstance that blood flowed from the right ureter only indicated the disease to be on the right side. Repeated endeavours were made to detect the presence of a stone in the right kidney by means of Roentgen ray photography and

FIG. 1.

Reduced x-ray photograph[2] from Case 1. The arrow points to the shadow of the calculus.

after four futile attempts a successful photograph was obtained[2] (Fig. 1). On Sept. 3rd, 1902, I performed a nephro-lithotomy on the right kidney and removed a stone of about the size of a marble from the pelvis. The kidney was situated unusually high up and hence considerable difficulty was experienced in extracting the stone. The patient made a good recovery and since the operation there has been no recurrence of pain in either renal region, nor has there been any hæmaturia.

CASE 2. *Symptoms of renal calculus on the right side of over 18 months' duration; x rays detected stones in the left kidney which were removed; disappearance of pain on the right side.*—The following note I received from Dr. Thomas Colvin:—

A married man, aged 33 years, first consulted me in April, 1902, in regard to an aching sensation across the lumbar region and over both

[1] Glasgow Medical Journal, vol. lvi., No. 2, p. 103.

[2] The Roentgen-ray photographs were done by Mr. J. Trotter, 28, Gordon-street, Glasgow.

loins. He had no difficulty on micturition nor did his urine seem to him to be abnormal in quality or quantity. He was daily at his business and felt well excepting this aching over the region described and which did not at this time amount to an actual pain. On examination I found his temperature and pulse normal. The urine to the naked eye did not suggest hæmaturia or pyuria but on testing it was found to contain a small quantity of albumin. My diagnosis was subacute nephritis and I prescribed rest and the usual routine treatment for that complaint. He made a good recovery although a trace of albumin was present in his urine when he returned to business again. A year later, in April, 1903, he again consulted me and this time he complained of pain across the lumbar region and especially in the right loin. There was not the shadow of a doubt of the pain at this time being on the right side and not on the left side, for the patient, who was a shrewd business man and a most trustworthy observer, afterwards reminded me that among other local applications I prescribed to relieve the dull pain on the right side was a fly blister about three inches square. The pain at this time had not the character or the direction of that in renal colic. Whilst he had no difficulty on micturition his urine was of a smoky tint and on testing it not only albumin but blood also was present. No microscopical examination was made. The question was now raised of a renal calculus on the right side, and an operation was even hinted at, but as the patient seemed to improve rapidly with absolute rest in bed, a milk dietary, and diuretics and was most anxious to return to business nothing further was done. Two months later, on June 2nd, he sent for me hurriedly one morning and said that several times during the previous night he had had acute attacks of pain on the right side over his right kidney and shooting down towards his right testicle. According to his description of these attacks they suggested to my mind renal colic, although not of such an agonising character as is often seen. His urine again contained blood. I then told him that there was no doubt that he had a calculus or calculi in the right kidney and insisted on his seeing Dr. Newman in regard to an operation. He consulted him a few days later and an operation on the right side was recommended. The patient had fortunately for himself as the sequel showed, a strong objection to operative interference, so he sought the waters of Harrogate in the hope of a cure. Whilst there he consulted a physician in Harrogate who also recommended an operation on the right side. On the advice of a friend he went to London and consulted a surgeon who wrote to me that my patient had most probably right pyelitis due to calculi and he recommended operation on the right side. It is only fair to say here that the patient told the consultant that he had been cystoscopically examined and skiagraphed with no definite result. The remaining history of the case will be related by Dr. Newman. I have only to add that the case was a most instructive one to me in many ways and among other facts deeply impressed on my mind the extreme value of the x rays in renal diagnosis. I am firmly convinced that if my patien had gone to any medical man with the symptoms I have mentioned his advice would have been to operate on the right side. There was only one other point. Was the right kidney normal? To that question my reply would be that the x rays were faithful in bringing out calculi on the left side and none on the right side. Moreover, the operation was eminently successful and the patient is now free from all pain or discomfort and to be absolutely certain that he will remain so I shall report the case later to Dr. Newman.

When I was asked to see the patient on May 4th, 1903, I came to the conclusion that he was suffering from a calculus in the right kidney but to confirm the diagnosis I had an x-ray photograph taken and on the 11th I examined the bladder with the cystoscope. From neither of those observations was any benefit derived. The bladder was strictly healthy and there was nothing remarkable about the appearance of the orifice of either ureter and the photograph failed to show any distinct shadow of a calculus. On August 7th three photographs were taken and in one of them there was a faint indication of a shadow corresponding to the position of the pelvis of the left kidney, but as this was indistinct no reliance was placed upon it. Again on Oct. 12th other three photographs were taken and in two of them the same shadow was found (Fig. 2). This pointed clearly to the presence of a calculus and notwithstanding the predominance of pain upon the right side I concluded that the stone was in the left kidney. At this time there was some pus in the urine and on making a cystoscopic examination I found that it proceeded from the left kidney. This corroborated the view of the position of the calculus. On Oct. 17th I explored the left kidney and found two stones, each weighing about two drachms. The patient made a good recovery, as indicated in Dr. Colvin's report.

CASE 3. *Pyonephrosis limited to the right kidney; pus and albumin in the urine; pain most marked in left lumbar region; nephrotomy; cure.*—A man, aged 26 years, consulted me first in July, 1898. He then complained of pain across the back and extending downwards to the crest of the ilium. The history of the case showed that the first departure from health was noticed two and a half years previously. At first the pain was generally distributed over the lumbar regions on both sides. As the disease advanced the pain was most marked in the region of the left kidney and frequently limited to that part. The patient was admitted to the Central Home where on examination I found that on palpation there was a distinct enlargement of the right kidney while the left kidney could hardly be felt. On admission the patient complained of frequent micturition; the urine was copious, pale in colour, contained a siderable deposit of pus, the reaction was acid, and the specific gravity was 1010, but no blood had ever been observed nor had he passed gravel or stones. A cystoscopic examination showed the pus to be escaping from the right ureter only and this was confirmed by two subsequent

FIG. 2.

Reduced x-ray photograph from Case 2. The arrow points to the shadow of the calculi.

examinations. The patient was advised to have an operation performed but he preferred to wait and to test the effect of complete rest and medicinal treatment for three months. In November I saw the patient again and he then told me that little benefit had been derived from the treatment prescribed and he was now anxious to have an operation performed. During the last three months the pain was almost always referred to the left renal region but as the patient was convinced by the swelling on the right side that it was the right kidney that was diseased he consented to have an exploratory incision made. On Nov. 15th I incised the kidney and evacuated ten ounces of pus but no stone was found. The patient made a good recovery and when I heard from him last from Cape Town, South Africa, he reported that there was no recurrence of the pain and that the pus had disappeared from the urine entirely (October, 1902).

Glasgow.

ON SOME FORMS OF PSEUDO-APPENDICITIS (ENTERO-TYPHLO-COLITIS.—INTESTINAL LITHIASIS).

BY DR. BOTTENTUIT,
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THE frequent occurrence of appendicitis and the consternation it causes both to physician and patient has led Mr. A. H. Tubby to remark that as soon as a subject is seized with pain in the right abdominal region "it might be safely said that their brain is no longer in their cranial cavity but in the right iliac fossa, for so fixed is their attention on that region that every ache and pain there, any delayed action of the bowels, prompts them to expect an attack of appendicitis and to make their lives a burden to themselves and others." This prejudice has seized upon the medical faculty. For a long time appendicitis has been overlooked. How often has it been mistaken for hepatic or nephritic colic, salpingitis, &c.? It is necessary to dispel this fascination for McBurney's spot. To me it appears of interest to direct my readers'

attention to certain cases in which pain in the right iliac fossa, even increased at McBurney's spot, or intestinal crises, or abdominal symptoms, can deceive us or lead us to expect an appendicitis without a real appendicitis existing in the true sense of the word. If it has sometimes happened that appendicitis has been overlooked and surgical intervention rejected at a time when it was necessary, on the other hand operations have been undertaken for appendicitis which never existed. Works on appendicitis have multiplied, the importance of lesions of the appendix has been demonstrated, and nearly all symptoms heretofore attributed to typhlitis have been recognised to have their seat or local origin in the vermiform appendix and not in the cæcum. Treves (1835) showed that the cæcum is always covered by peritoneum but is not attached by areolar tissue to the iliac fascia. According to Treves the mesocæcum formerly described has no existence at all. All surgeons who have performed the operation for appendicitis for urgent symptoms formerly attributed to typhlitis maintained that these had their origin not in the cæcum but in the appendix.

Typhlitis was accordingly denied; this word was even proscribed by certain writers who devoted no space to it in their works on intestinal maladies. It is evidently an exaggeration to deny the existence of typhlitis. The cæcum may be the seat of the same inflammatory processes as the colon and the small intestine. Intestinal affections known under the name of follicular, membranous, or calculous enterocolitis are plentiful; the mucous membrane of the cæcum is injured but these lesions do not induce gangrene, perforation of the cæcum, or peritonitis. In this way they are differentiated from appendicular lesions or the sequelæ of appendicitis (Dieulafoy). This author, also, while attributing to the cæcum its due importance, formerly exaggerated and to-day underrated by certain writers, proposes to call inflammation of the intestine entero-typhlocolitis. The term "entero-colitis" had the disadvantage of ignoring the cæcum which, however, has a share with the small intestine and colon in the intestinal lesions. I adopt, therefore, the term "entero-typhlo-colitis" in place of the terms "entero-colitis or "catarrhal enteritis."

The study of muco-membranous entero-typhlo-colitis presents the greatest interest in regard to its relations with appendicitis and from the point of view of differential diagnosis. It is about 12 years since the first publications on this malady appeared. In 1892 I published an article entitled "Catarrhal Enteritis,"[1] describing the symptoms and pathogeny of this affection. Since that time numerous essays on this subject have been published. The relation of entero-typhlo-colitis to appendicitis has given rise to numerous discussions. The authors who first described muco-membranous colitis failed to note its coincidence with appendicitis. In 1892, out of 460 of my patients suffering from muco-membranous colitis not one to my knowledge had an attack of true appendicitis (infectious), though I was able to follow up these cases for several years in succession. Since that time I have observed more than 2000 similar cases and my statistics show an almost similar result. A small number of patients have had, after suffering from muco-membranous colitis, attacks of appendicitis, but the average is so small that these cases must be considered exceptional.

As Dieulafoy has remarked, we have here to deal for the most part with crises which simulate appendicitis, crises which he proposes calling pseudo-appendicitis in distinction to infectious appendicitis. Some writers, however, have affirmed that muco-membranous entero-typhlo-colitis led to appendicitis. This position might be maintained if we followed them up in six or seven cases per cent., but it is only right to add that these writers acknowledge that their patients did not show the symptoms of classic appendicitis, with its dramatic train of maladies and its terrible consequences, but only very light and trivial forms signalised by some fleeting symptoms which were cured concomitantly with the colitis which caused them. This might be called, perhaps, appendicism and I am of opinion that such cases might be called pseudo-appendicitis. I have frequently observed similar cases at Plombières but have had no fatal ones to deplore, but these were not cases of infectious appendicitis. I do not mean to say that gastro-intestinal troubles have no predisposing influence towards appendicitis but we must not exaggerate their importance. If we compare the number of cases of true appendicitis with the number of people who diet themselves improperly and have gastro-intestinal troubles it will be seen that the figures are reassuring to dyspeptics. It is the same with subjects who have muco-membranous entero-typhlo-colitis. Appendicitis only supervenes in quite an exceptional way in the course of entero-colitis.

Intestinal lithiasis has been specially studied since 1896. E. C Jones, Edward Shattock, R. S. Thompson, Delépine, and Dieulafoy called attention to this condition. Sir Dyce Duckworth and Dr. A. E Garrod have written interesting papers on this subject.[2] Intestinal lithiasis may be latent for many years. Patients are sometimes made aware of it by the special sensation arising from the evacuation of earthy substances. The presence of the sand in the stools, a more frequent symptom than is generally realised, arouses the patient's attention, but in most cases it is attributed in default of chemical analysis to the existence of biliary calculi. Patients who are observant maintain that they have painful attacks periodically recurring which after lasting several days finish in collapse. We almost always find in the vessel, along with sand, slimy and mucous substances and false membrane. Intestinal lithiasis nearly always coincides with entero typhlo-colitis, although some cases have been noted in which lithiasis existed alone. These facts have been mentioned by Hayem and A. Robin. I have observed a great many cases and they coincided with muco-membranous colitis. Intestinal lithiasis exists much more frequently than is supposed in enteritis and if it were not so difficult to get patients to keep a look-out for it—a task which is more than disagreeable, repugnant in fact—I am sure we should find it in many subjects. To find the sand with certainty the fæces must be placed on a fine sieve and water must be poured on them, sufficient in quantity to break them up. The stream of water must be continued till the water, received in a basin, has ceased to be coloured. The water must be decanted and the sand is then found, after the water has stood for a little, in the bottom of the basin. These salts are composed of phosphates and carbonate of lime and also of ammonio-magnesian phosphates. They also contain some organic matter. I have said that the presence of sand often sets up painful attacks which might lead to the suspicion of, or be taken for, attacks of appendicitis. Yet I have seen patients who had intestinal lithiasis and did not experience any attacks of pain. Dieulafoy considers that this intestinal lithiasis is of the same kind as the others and is dependent on a gouty or arthritic diathesis. All the patients I have seen afflicted with muco-membranous entero-typhlo-colitis (several thousands) showed characteristics of the gouty or arthritic diathesis.

Diagnosis.—The two most frequent forms of enteritis which may be confounded with appendicitis are muco-membranous entero-typhlo-colitis and intestinal lithiasis. Diagnosis is not always easy and its possible confusion with inflammation of the vermiform appendix explains my usage of the term "pseudo-appendicitis." Let me recall in a few words what are the principal symptoms of appendicitis in its most frequent form. Most often the attack of appendicitis comes on suddenly; sometimes, however, it is preceded by intestinal troubles, alternation of diarrhœa and constipation, flatulence, expulsion of gas or extremely fœtid matter. Sometimes there are nausea and vomiting. The fever is generally insignificant; abdominal pains are quickly localised in the right abdominal fossa. These intestinal troubles may even at this stage be caused by the absorption of toxins secreted by the bacillus coli whose virulence begins to increase. At the end of some days, or even hours, the crisis breaks out and it is usually not till this moment that the medical man is called in.

I need not here describe the symptoms of an attack of appendicitis; I need only recall the three principal signs: 1. The pain, either spontaneous or provoked by pressure at McBurney's spot, more or less acute, which spreads sometimes to the epigastric region or other parts of the abdomen, but which can always be easily localised by a careful examination. 2. The defensive state of the abdominal muscles. At first there is a general rigidity of all the abdominal muscles but later the rigidity becomes localised in the right iliac fossa. 3. The hyperæsthesia of the skin corresponding to the appendicular zone. If the skin be lightly rubbed in this region either with a pencil or with the end of a glove a hyperæsthesia is revealed which does not exist elsewhere. Sometimes, indeed, by exciting this hyperæsthesia we give

[1] Brit. Med. Jour., April, 1892.

[2] Transactions of the Royal Medical and Chirurgical Society, 1902.

rise to painful reflex cramps in the underlying muscle. 4. Nausea and vomiting set in sometimes with the premonitory period. These are generally bilious.

Stercoral typhlitis is met with fairly often but is frequently passed over because the physician's attention is absorbed with the idea of appendicitis. Renvers cites the statistics of the German army to show the frequency and also the benignity of this malady. Stercoral typhlitis is cured by medical treatment. In certain cases the necropsy reveals tumefaction in the walls of the cæcum, following on prolonged constipation, and accumulation of fæces in the cæcum, but the appendix is healthy. To sum up, stercoral typhlitis is nearly always a benignant affection. Hence we can understand that Sir Dyce Duckworth has not found mention of a single case of typhlitis in the post-mortem registers of St. Bartholomew's Hospital during a period of eight years. I have seen several cases diagnosed as appendicitis. There were puffiness in the right iliac fossa and pain at McBurney's spot, but the sensation given by palpation of the tumour, its clammy consistence, its sausage-shape, and the more or less habitual constipation, accentuated during the last few days, caused me to reserve my diagnosis. The use of an enema was followed by expulsion of fæces. Then it was seen to be a case of stercoral typhlitis, not appendicitis. As soon as the intestine was freed the symptoms improved and tumefaction ceased. Mr. Tubby cites an analogous case seen with Dr. W. H. Allchin. I have seen habitually constipated patients who have often experienced the same trouble. Broca mentions the following case. He was urgently summoned to the Trousseau Hospital to a little girl who was convalescent from scarlet fever and seemed to be entering on an attack of appendicitis with fever. There were, in fact, pain on pressure at McBurney's spot, vomiting, and constipation, but the evenness of the pulse caused him to delay measures. The next day all the symptoms passed away after the expulsion of a thread-worm.

I have already described the premonitory period which may last a long time, years even (Altérs de Bonn). It is characterised by troubles which establish themselves slowly and in so imperceptible a manner that the patient scarcely perceives it. Digestive troubles are especially noticeable owing to paucity of stools which are passed every three or four days. They are very scanty. The amount of defecation is not proportionate to the amount of food taken. The fæces are viscous and brownish, sometimes hard and as if moulded. The appetite is preserved but disturbed from time to time. The abdomen is often inflated, especially in the right iliac fossa. Work becomes difficult and sleep irregular. Gradually stercoral dilatation of the cæcum will be set up, the most rapid and natural consequence of prolonged retention of matter in the intestine. In certain cases typhlitis may set in suddenly and assume an active form. Following on slight symptoms of gastric disturbance the medical man administers a purgative and is surprised at the extraordinary quantity of matter, often with a fœtid odour, which is expelled. By questioning the patient he will get at the history and find out if he was generally constipated, or if he had alternations of constipation and diarrhœa, or, lastly, if he had already had similar attacks. The puffiness of the iliac fossa, the shape of the stercoral tumour, the localisation of the pain, and the absence of cutaneous hyperæsthesia, and generally of fever, will cause us to delay diagnosis and to temporise. The patient should be closely watched. The employment of injections and purgatives will suffice to bring on abundant stools and to clear up the diagnosis. In this case the symptoms mend rapidly and the attack ceases until it appears later, for this disease is subject to reappearance.

Cases of entero-typhlo-colitis are usually easy to diagnose; the expulsion of slimy or mucous matter or false membrane, constipation or alternating constipation and diarrhœa, or diarrhœa alone, or pains in the abdomen, enable us to recognise the disease. Diagnosis is difficult only when there are paroxysmal crises. In such cases the intensity of the pain, the feverish condition, and the vomiting may make the medical man mistake them for appendicitis. These enteralgic or paroxysmal crises are frequent in mucomembranous entero-typhlo-colitis.

I have said that entero-typhlo-colitis in its benignant form sometimes escapes detection. Patients attach little importance to it and if an attack of paroxysms comes on and the medical man is not informed of it confusion will be possible if he be unacquainted with the habitual condition of the patient. These crises may arise suddenly: errors of diet or a strong purgative, or fatigue, or any kind of excess, or even psychical causes may produce them. The pains when very sharp are generally localised along the course of the transverse colon. This pain is usually more severe on the right side over the hepatic flexure and on the left side over the splenic flexure. Next in frequency to these are painful points in the iliac fossa on the right or left side, near the cæcum or the sigmoid flexure. According to its position the pain may simulate the painful paroxysms of hepatic or nephritic colic, or yet again those of appendicitis. It is accompanied by reactional phenomena, such as feebleness of pulse, cold sweats, contracted facies, and the like. In many cases there is cutaneous hyperæsthesia at the level of the sigmoid flexure, sometimes on the left and sometimes on the right side. We can understand that when the maximum of pain is seated on the right iliac fossa on a level with McBurney's spot a mistake may be easily made. I have remarked that in entero-typhlo-colitis cutaneous hyperæsthesia is observed, now on the right side, now on the left. If this hyperæsthesia is specially marked in the cæcal region, with muscular resistance, we are very much tempted at the outset to diagnose appendicitis. The physician will have to make a careful study of symptoms and antecedents.

The subject who is attacked by appendicitis is nearly always seized unawares in the midst of robust health. In attacks of entero typhlo-colitis there has nearly always been a period of digestive troubles which the patient will remember even if he has never examined his stools and if he is unaware that he is suffering from entero-typhlo-colitis. He will recollect, when interrogated, that he has already had attacks of pain in the left side or in the transverse region of the abdomen. He will tell you that he is subject to intestinal troubles, constipation, diarrhœa, especially under the influence of cold or departure from regular diet. In appendicitis the maximum of pain is in the cæcum, very near the appendix, but in entero-typhlo-colitis the pain is not definitely localised; it radiates over the path of the colon, principally on a level with the hepatic flexure and splenic flexure. There is another point often very painful between the umbilicus and the ensiform appendix. In this case it is the transverse colon which is the seat of the pain.

Diagnosis, then, will embrace examination of the stools to see if they contain slimy substance or even false membrane or sand. When the diagnosis is once determined and all idea of appendicitis is rejected, treatment will be given for a paroxysmal attack of entero typhlo-colitis. But it will be well to watch carefully McBurney's region and always to bear in mind the possible inflammation of the vermiform appendix with its protean forms which are so deceitful and its progress, often irregular, which will induce fatal consequences from an error of diagnosis.

Paris.

A NEW FORM OF REMOVEABLE DEEP SUTURE FOR THE PREVENTION OF STITCH SINUSES.

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THAT sutures which were at the time of their introduction into the tissues perfectly aseptic will from time to time reappear with the formation of a sinus in the cicatrix of a wound healed by perfect primary union is an undoubted fact, and the period which may elapse between the operation and their appearance varies from a matter of a few weeks to several years. It is difficult to say up to what time from the date of operation the blame for such an occurrence should be attributed to primary infection of the sutures, but probably from six weeks to two months is a fairly accurate estimate, for although the process is necessarily an extremely slow one, the organisms concerned being of very low vitality in most cases, few wounds are of sufficient depth to prevent the pus resulting from the circumscribed area of necrosis from reaching the surface of the body well within those limits. There is little doubt that the occurrence of stitch sinuses following the use of perfectly aseptic sutures may be favoured, first, by the tension of the suture; secondly, by the method of its application; and thirdly, by the varying condition of the

patient's health. The first of these causes is the most important, for in many cases the degree of tension is a matter over which the surgeon has but little control; wounds the edges of which *must* be brought together can at times only be dealt with by the use of such tension as is incompatible with the life of the area of tissue involved. Thus, in a case of radical operation for the cure of an umbilical hernia where a considerable amount of tissue has been removed, each deep stitch will have between the two stitch-holes and the incision two small areas of anæmic tissue, triangular in shape, which will gradually undergo necrotic change, the stitch becoming loose as a consequence. It is easily seen, therefore, that at the end of a week or ten days the deep stitches are no longer of any service—indeed, they but serve by their irritating presence to prevent the healthy absorption of this small necrotic area and to add to the chances of sinus formation, especially when such materials as silk or salmon gut are used. Where edges come together easily and without tension such trouble may never arise unless the stitch becomes secondarily infected through the patient's own blood stream. The second cause has reference chiefly to the "mattress" suture, than which I believe there are few things in the way of a suture more detrimental to the deeper tissues of the body where tension has to be considered. This is well shown in the skin if we take the amputated breast as an example, for even where the greatest tension is necessary to bring the margins into apposition sloughing is rarely extensive or serious if a simple straight suture is employed, but when the "mattress" suture is used one frequently sees the square areas included in the stitch sloughing badly, the portion of the stitch lying parallel to the incision having cut off nearly the entire blood-supply. If, then, such suture be applied to the deep tissues the result is the same, but in addition the irritation caused by the continued presence of the buried stitch becomes a potent factor for evil. Of the third cause we know but little; indeed, at times stitches are returned almost as they were introduced without any appreciable change having taken place in the patient's bodily health to account for the occurrence. A case will illustrate this.

In April, 1901, I had occasion to perform an exploratory laparotomy on a woman, aged 50 years, for an obscure mass in the right hypochondriac region. The patient was in perfect health at the time of operation and has remained so ever since. The incision was four inches in length and in the right semilunar line and was closed in three layers, silk being used for the peritoneum and muscular wall, and no tension being caused. The wound healed by primary union throughout and the patient was discharged in three weeks. At the end of 12 months she returned with a small sinus in the scar, from which I removed two silk stitches of the muscular layer. The sinus closed at once and I heard nothing further from the patient till April of this year when she returned with a second sinus, from which I removed the continuous peritoneal suture hardly altered by its two years' incarceration.

The above case appealed to me strongly as one in which an unavoidable cause had been at work, and being one of three cases all much of the same character I turned to the question of removeable deep sutures in search of a remedy, for although there are surgeons who maintain that no stitch sinus ought ever to occur I venture to submit that such an ideal state has not yet been arrived at nor will such be attained till we can close our wounds by some method as yet unknown which requires no suture of any sort. And in the meantime, whether right or wrong in practice, we can obviate a source of great discomfort and much inconvenience, and at times pain to many patients, by the use of a suture which can be removed when its object in the tissues has been accomplished.

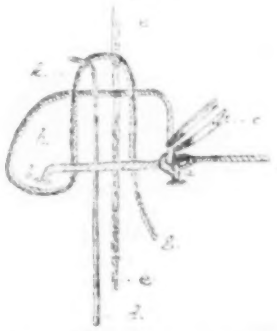
Having tried and abandoned many forms of removeable deep suture and come to the conclusion that none of them answer their purpose in every respect, each having some drawback, I have been led to evolve the following method which I think will be found to give satisfaction, since it combines the chief points of an ideal suture—viz., (1) it is easily applied; (2) it is painlessly and easily removed, no matter how tightly it may have been applied (thus avoiding one of the great drawbacks to sutures which depend on the lock-stitch principle when used in situations where tension is unavoidable; and (3) accurate apposition of the edges of a wound can be assured without the danger of the suture slipping, as is so often the case where the continuous lock stitch is used. The suture itself may consist of any material from fine silver wire to stout silkworm gut, but for cleanliness and ease of application I personally always use the latter, for since it is necessary that removeable deep sutures, no matter by what method they are applied, must emerge on the skin surface, silk, which from the nature of its structure rather favours by capillary attraction the entrance into the wound of micro-organisms, is to be avoided. Such an event should, however, never occur if proper precautions have been observed prior to operation. That my suture has the drawback which pertains to all removeable deep sutures—namely, that it must emerge on the surface of the skin—is inevitable; beyond this, however, it will, I think, be found to be one of the most practical at present described. Two lengths of silkworm gut are joined end to end by very fine loops without the use of knots (Fig. 1).[1] One is the suture (*a g*) and the

FIG. 1.

Looped ends of extractor and suture.

other is the extractor (*f*). The unlooped end of the former is threaded on a needle in a handle and passed through a good thickness of tissue on each side of the wound *e*; the needle is unthreaded and the end *g* is passed through the loop *a*. The noose thus formed is drawn tight and is caught by the assistant with a fine pair of forceps (*c*) close to the loop *a* (Fig. 2). An aneurysm needle is ow

FIG. 2.



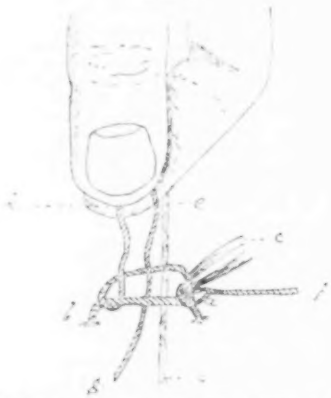
a, Loop in suture. *a*, *b*, Stitch holes. *c*, Forceps holding suture. *d*, Needle carrying loop *k*. *e*, Line of incision. *f*, Extractor.

threaded and the end *g* being drawn well through the eye the needle is passed beneath the stitch *a*, *b* and then through the loop *k* which is thus formed. The suture being now caught by the finger and thumb at the point *k* (Fig. 3) the needle is withdrawn. By pulling on the loop *k* a knot is made round this loop and round the loop *a* which will hold the suture. The end of a stout piece of silkworm gut (*m*) (Fig. 4) is now passed through the loop *k* which is drawn down upon it gently; this serves to prevent any tendency on the part of the loop to slip during its sojourn in the wound, since it acts the part of a lock suture. As each of the deep sutures is completed this same piece of gut is passed in this manner and so serves for all. The free ends of the extractors (*f*) and of the sutures (*g*) are threaded on a needle, each pair in turn, and are brought through the skin about an inch from the wound and *on the same side of it as that from which the suture was passed*; a knot is made on the extractor to distinguish it, and a split shot is fixed to both. The free ends of the lock suture are brought through the skin beyond each end of the incision and are similarly shotted. The wound is then closed and dressed in the usual manner. When it is considered desirable to remove the deep sutures all that is necessary is to remove one of the shots on the lock suture *m* and to withdraw it. The remaining shots are removed and the ends *g* are each pulled upon in turn till the loop *k* is felt to disengage, after which they are cut off as short as possible by pressing the skin down while

[1] These are made to my directions by Messrs. Down Bros.

the ends are firmly held. It will now be found that when the extractors (*f*) are firmly pulled upon the remaining portion of the suture will come away without difficulty. Should this, however, not be the case the extractor may be

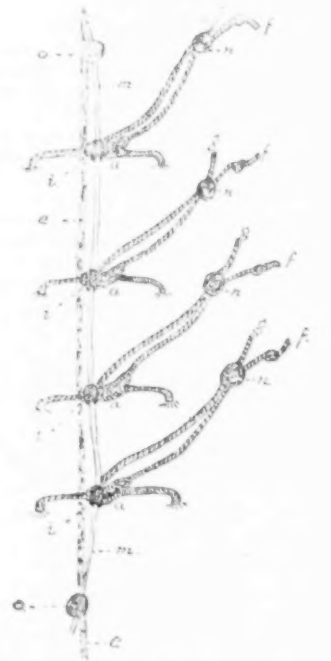
FIG. 3.



Needle withdrawn. Finger and thumb tightening loop *k*.

left in position for a day or two longer when it will be easily removed. With regard to the peritoneal suture in laparotomy wounds, although trouble may be caused at times, as in the case I have mentioned, such an event is extremely rare when very fine silk or catgut is used. I have

FIG. 4.



i, Loop *k* drawn tight on *m*. *m*, Salmon-gut lock suture. *n*, Shot on *f* and *g*. *o*, Shot on *m*.

not therefore found it necessary to depart from the ordinary form of suture. It is the sutures of the muscular and fascial layers which so commonly cause sinus formation and it is to those that the above method more especially applies. If, however, it is desired to employ a removeable peritoneal suture it may be done by the method devised by Milton[2] which is admirably suited to the purpose. In conclusion, I may say that I have submitted my method to practical test in cases of abdominal section and hernia, both femoral and inguinal, and have found it to answer the purpose well.

Mansfield street, W.

THE MENTAL STATE IN MYXŒDEMA.

BY H. WOLSELEY-LEWIS, M.D. BRUN., F.R.C.S. ENG.,
SENIOR ASSISTANT MEDICAL OFFICER AT BANSTEAD ASYLUM.

HAVING recently had some cases of myxœdema under my care I have had an opportunity of making the following analysis of their mental state. These patients are commonly sent to asylums as cases of dementia or melancholia. They present, however, few of the characteristics of either condition. Their memory for remote events is generally good and their impairment of memory for recent ones is slight and confined to a period coincident with the duration of their disorder. Their apprehension is fair, their coherence of thought is good, their reasoning power is sound, and their consciousness is clear. What depression they exhibit arises rather from a consciousness of their condition than from any more fundamental affection of the emotions.

It will appear that the essential change in these patients lies in a deficient power of energising their motor cells. They complain that they are languid and tired and tell of the immense effort it is to them to make even the simplest movement. This explains why they sit expressionless and in the same attitude for hours like an artist's lay figure. While their perceptive faculties are fairly acute and enable them to gauge their relations with the world with considerable accuracy, their power of giving out their ideas to the world is minimised almost to extinction. Perception is usually good but there is no doubt that they do suffer from illusions and hallucinations at times. These abnormal perceptions are not a prominent symptom and are often of the kind known as "pseudo-hallucinations"—that is, they are not objectively very real but are simply a vivid re-perception of a "memory image." One patient thought that she heard her dead husband's voice; this, however, she explained, must really have been the voice of the man in the next room because she noticed that she never fancied such a thing when he was away at his work, thereby showing her powers of observation and reasoning. Another patient, thinking much about her husband to whom she was attached, would sometimes seem to hear his voice. Consciousness seems to be clear as a rule. Patients recognise their disability and are worried by it. This accounts for their occasional irritability and perhaps for the rare attacks of spitefulness and even violence that have been noticed. They are anxious to do their work and may be depressed because they cannot rouse themselves to do it. Apprehension is impaired to the extent that those memory associations which are required to complete any percept need a more powerful stimulus to bring them into consciousness. Hence spontaneous attention, or the instinctive selection of some stimuli in preference to others, is defective, although voluntary attention or the concentration on certain stimuli by an effort of will is good. A patient declares that, while she will sit staring vacantly before her thinking of nothing properly, she is able by an effort of will to follow some particular train of thought with as much lucidity as ever. With some stuporous cases of insanity, if one suddenly shouts in the ear there is no indication that they perceive the unusual stimulus, but in myxœdema it is found that the patient has been mentally "startled" though he may give little or no expression to the fact.

Memory as regards retentiveness is good but the impressibility of memory during the myxœdematous state is diminished. Hence these patients do not recall many smaller events which occur while they are in this condition but can recall with accuracy those larger events of which they took full cognisance at the time. A patient was able to give me many details of things happening some years ago and to recite with much circumstance events occurring since her recovery, but her recollection of the time during

[2] THE LANCET, June 6th, 1903, p. 1585.

which she was ill was imperfect. Some writers state that myxœdema extending over some time leads to a permanent demeutia. I have had two patients, both of whom had a relapse of the disease due to ceasing to take thyroid extract, who exhibited little dementia after recovering a second time, though the whole disease extended in one case over seven years.

Ideation and the formation of concepts do not appear to be diminished and the association of ideas seems to be good. There is a retardation of thought and the elaboration of an idea is difficult but complete. These patients are coherent and their speech, though slow, is to the point. In a recovering patient one of the earlier signs of improvement was that she began to read novels and she now assures me that she could picture to herself the scenes described therein as well as ever and that she found no difficulty in the understanding and amplifying of such abstract ideas as "speed" and "thought."

Judgment and reasoning power are not defective and once aroused to attention the myxœdematous subject can give a very sound opinion. Thus, I asked a patient, Would you prefer working half an hour every day in the week for 1*d.* a day or four hours on one day for 7*d.* and why? She answered that she would work half an hour on each day because she would then gain 7*d.* for three and a half hours' work. It took her five minutes to answer this question but she told me that she had made up her mind long before that but could not get the answer out. On inquiry she explained that she felt the answer "on the tip of her tongue" but failed to voice it. As far as I have observed these patients have no definite delusions but they are inclined to be suspicious. The capacity for work is diminished and they are conscious that their mental processes are less facile and that they readily tire. They cannot follow an argument closely for long and have to put down the book they are reading sooner than when they are well. These patients neither laugh nor cry and any sign of emotion is rare with them. Their affective state, however, is not one of indifference, the maternal instinct is strong, and they usually retain their consideration for others and affection for their relatives. Their sensitiveness is not decreased, for one of my patients having almost entirely lost her hair I chaffed her good-humouredly about it; this I afterwards found she had felt acutely and when she recovered was able to recall the feeling of shame which she had suffered. Their moral sense is in no way blunted. Though these patients are often described as melancholiacs they do not appear to be more depressed than is natural as the result of the consciousness of their condition.

It is essentially in disturbances of volition and action that the peculiar mental symptoms of this condition manifest themselves. A diminution of volitional impulse produces that lack of initiative, that striking immobility of face and body so characteristic of the disease. To originate even the simplest movement requires a very special exercise of the will. An external stimulus to produce a movement must be unusually strong. It is at the commencement of action that the block occurs and noticeably when once action has begun it flows more easily. The execution of the movement itself is slower than usual. Patients describe the tremendous difficulty they had, not in perception or understanding but in action. A loud command elicits a quite inadequate response though their appreciation of the order seems in no way diminished. It is noticeable that these patients are always more "tired" in the morning than in the evening. One tells me that if "a neighbour popped in to see her" it did her good, because at first she could hardly answer a word but after a time found she conversed more easily. Another was asked to get up from her chair, to walk to the end of the ward, to sit down on another chair, and to return (the whole manœuvre in a healthy person taking 30 seconds). It took her three minutes to do this, half the time being occupied in getting up from her chair, so that one wondered whether she had understood the request; she informed me afterwards, however, that she had the greatest difficulty in making a start but that once on the move she could get along fairly easily. To make a simple statement, "Yes" or "No," took a patient five seconds but she always answered correctly; to make a complicated movement such as "clasping the hands behind the back" took 45 seconds. Under treatment these times gradually shortened coequally with quickening of the pulse and rising of the temperature. On admission it took a patient five seconds to say what part of her face I touched; after 14 days' treatment it took her two seconds. I have not found that, apart from their slowness, the movements made were particularly clumsy, these patients when getting better often writing and sewing nicely. I noted in one patient that the knee-jerk, though well marked, was delayed and the contraction of the quadriceps extensor was prolonged.

I submit then that the changes in the mental condition of those suffering from myxœdema are almost confined to the sphere of action. It seems necessary to suppose that either some toxin in the plasma surrounding the motor cells inhibits the chemical processes which originate a motor impulse or that the absence of some substance from the blood interferes with the discharge. This toxin is neutralised or this essential substance is supplied by the administration of thyroid extract; the patients get well and keep so as long as they continue to take thyroid. I have observed that the simultaneous exhibition of syrupus ferri iodidi appears to assist its action. We see this class of patients described by such terms as dull, listless, apathetic, taking a long time to comprehend and to answer questions, of sluggish ideation, of sluggish mentation, demented, depressed, moping, lethargic, suspicious, of impaired memory, sleepy, torpid, contented, and irritable. I suggest that this proves on careful inquiry to be but part of the truth and that the majority of these cases are sent to an asylum in error and could be as well treated outside one.

Banstead.

A CASE OF ULCERATIVE COLITIS IN WHICH A LEFT INGUINAL COLOTOMY WAS PERFORMED TO CONTROL EXTENSIVE HÆMORRHAGE.

BY HENRY BETHAM ROBINSON, M.D., M.S. LOND., F.R.C.S. ENG.,

SURGEON TO OUT-PATIENTS AT ST. THOMAS'S HOSPITAL; SURGEON TO THE EAST LONDON HOSPITAL FOR CHILDREN, SHADWELL, ETC.

THE following case was operated on by me as long ago as May, 1891, and, death occurring a few days after, I exhibited the diseased colon as a card specimen at the Pathological Society of London and a brief account appears in vol. xlii. of the Transactions, p. 115. As reference to this case by subsequent writers[1] and inquiry by others as to further details have been made to me from time to time, I have thought it desirable to record the case in full. It has been referred to as one of the earliest cases, if not the first, in which the colon has been opened for this ulceration. Mr. A. W. Mayo Robson[2] records a case operated on by him in June, 1891, in which a left inguinal colotomy was performed so as to treat locally the diseased mucous membrane through the artificial anus. Now, in my case the motive was the attempted arrest of a dangerous and exhausting hæmorrhage assumed to have its origin in the sigmoid loop which was tender and unduly palpable. The diagnosis was correct and the purpose was effected, but owing to the feeble condition of the patient he died on the fourth day before there was any opportunity of considering the advantages to be obtained from direct treatment of the ulcerating mucous membrane. This, then, is the explanation why the colon in this case was exposed on the left side, a form of treatment, from the light of our later experience, giving a much lessened chance of effectually dealing with the disease than when the opening is in the neighbourhood of the cæcum.

A man, aged 66 years, was admitted into St. Thomas's Hospital for cataract extraction in the early part of April, 1891. For some months he had been in a state of debility but with no definite symptoms except that about a month before admission he had passed blood per rectum and from time to time had had pain about the left iliac region; he had never been out of England. On admission he was cachectic-looking and his urine was slightly albuminous. About three weeks afterwards (May 2nd) he had diffuse abdominal pain, not very acute, and there was no marked tenderness, except in the

[1] Hale White and Golding-Bird: Transactions of the Clinical Society of London, vol. xxxii., p. 183.

[2] Mayo Robson: Ibid., vol. xxvi., p. 213.

left iliac region, where there was some increased resistance over the line of the colon. There had been constipation for two or three days, so the bowels were relieved by an enema, a well-formed motion being followed by an acute diarrhœa with plenty of mucus and bright blood. The above symptoms were accompanied by vomiting which occurred several times. The free hæmorrhage from the bowel continuing through the day, the condition of the patient became such that it was imperative to do something to stop it. As stated before there were some fulness and increased resistance in the left iliac fossa with tenderness; no actual tumour was to be made out here or elsewhere in the abdomen. These signs with the bright blood pointed to the part of the bowel involved—namely, the sigmoid flexure, and it was evident that some large vessel was opened. The diagnosis rested between malignant disease and ulceration of the colon and the signs in general suggested that it was the latter condition. I decided to open the abdomen in the left inguinal region so as to explore the sigmoid flexure and to control the bleeding spot.

An incision three inches long was made, the muscle was divided, and the parietal peritoneum was fixed to the skin margin. The sigmoid loop was drawn out and the cause of the hæmorrhage was fortunately discovered. There was a large ulcer about two inches by one inch in the long axis of the bowel and along its free edge; the base of the ulcer appeared to be practically only peritoneum. As it seemed certain that this ulcer would perforate this segment of the gut was brought up out of the wound and fixed there by passing a glass rod through the mesosigmoid and packing it round with gauze. The bowel was not opened. There was no further pain or hæmorrhage and the patient took his fluid nourishment well. On May 7th in the early morning the bowel opened spontaneously at the site of the ulcer; during the day he was not so well, getting gradually more feeble, and he succumbed during the night.

At the post-mortem examination there was found well-marked ulcerative colitis beginning in the cæcum and extending to the lower end of the sigmoid flexure where the changes were most marked. Here the bowel was thickened and contracted, showing many small circular sharply cut ulcers as well as the one large ulcer before mentioned; many of these were evidently of long duration. The rectum was practically healthy. Under the microscope the bowel gave no evidence of malignant disease. Very marked granular contracted kidneys were present.

Upper Wimpole-street, W.

A CASE OF ANEURYSM OF THE AORTA RUPTURING INTO THE PULMONARY ARTERY ASSOCIATED WITH FIBROSIS OF ONE LUNG.

BY FREDERICK J. SMITH, M.D. OXON., F.R.C.P. LOND.,
PHYSICIAN AND PATHOLOGIST TO THE LONDON HOSPITAL.

(*With a Note on the Lung by* DR. R. N. SALAMAN, *Acting Director of the Pathological Institute, London Hospital.*)

THE following case seems sufficiently rare to merit publication. The patient was a soldier, aged 31 years, sent to me by Dr. Alexander of Bromley on Jan. 26th, 1904, on account of shortness of breath and some swelling of the right side of the neck and face; he also complained of a cough and pain in the back. For the following notes I am indebted to my house physician, Dr. H. E. Ridewood. Of the patient's family history nothing need be said. His personal history was that he had been a soldier for many years in India and had had there gonorrhœa with bubo and gleet but had no recollection of syphilis, though it was obviously possible if not probable. He had malaria in 1895 and recently—up to three or four months previously—had been working as a labourer. He drank moderately. The history of his present illness was that he was well enough up to some three or four months ago, when he began to complain of a cough and of shortness of breath. Both these symptoms had gradually but steadily and progressively got worse; he also complained that they were worse in the morning after lying down and occasionally had caused a distinct feeling as though he would choke. On one or two occasions lately they had actually caused a fainting attack. In addition to these symptoms he had (1) a dull aching pain starting from the right side of the root of the neck radiating upwards into the head, worse at night and on coughing; (2) swelling of the right side of the neck, face, and shoulder, which was worse on lying down; and (3) difficulty in swallowing, all three of which had, like the other symptoms, gradually increased in the last three months.

On admission the patient was a thick-set muscular man of medium height, very obviously suffering from genuine difficulty of breathing associated with a swollen condition of the upper part of the right chest and neck. He was not at all wasted nor cachectic nor, indeed, feeling very ill in himself and had walked up to the hospital and to the ward unaided. His temperature was normal. Examination of his chest gave the following physical signs. Over the swollen area the veins were more obvious to the eye than on the corresponding parts of the left side but they did not pulsate and would not fill from the cardiac side. The swelling itself was doughy but without any pitting on pressure anywhere. He had perceived it himself because he could no longer wear his usual 16½ inch collars. His breathing, which he himself described as shortness of breath, was very typically—so much so that I used him for clinical demonstration of the point—that due to some form of laryngeal obstruction with slight stridor on inspiration, more marked on slight exertion or on lying flat on his back in bed. The cough was dry and brassy in character and the respirations were 40 per minute.

Palpation enabled us to fix the heart's apex beat just above the sixth left rib five inches from the mid-sternal line. The general cardiac impulse was slightly heaving as though the organ were somewhat hypertrophied. On percussion the cardiac dulness was practically normal, extending from the apex in a slanting direction inward to the junction of the third rib with the sternum and bounded by the left border of the sternum. There was an area dull to percussion over the first and second right ribs and the intercostal space between them and extending over the upper part of the sternum even to the first intercostal space on the left side. Auscultation of the heart revealed the following condition. At the apex the sounds were clear and somewhat exaggerated, at the base the second aortic was slightly accentuated, over the dull area the cardiac sounds were very clearly heard, but nowhere was there anything like a bruit nor thrill nor undue pulsation. On auscultation of the lungs the inspiratory breath sounds were exaggerated apparently, but this was, I think, merely a conduction of the tracheal sound; otherwise there was nothing unusual except an occasional rhonchus and a few crepitations at either apex. In view of the post-mortem changes it must be distinctly noted that I could not remember any noticeable difference in the breath sounds on the two sides except the ordinary normal louder sounds on the right.

Features external to the chest.—Tracheal tugging was looked for and my house physician thought he could appreciate it but I was unable to do so; he also states that it became more marked in the course of time. The pulse was 84 per minute, of medium tension; the vessel wall was palpable on rolling it under the finger but could not be styled very degenerate. There was no appreciable difference in time or volume between the two radial pulses. The carotids could not be compared owing to the swelling of the neck. The pupils were equal and active for accommodation and to light. There was no paralysis of either vocal cord. To account for the pain in the back nothing could be seen, felt, or heard; an occasional pain down nearly to the wrist on the right arm seemed to own a causation in common with the swelling. The blood, urine, and abdominal organs were all carefully examined but showed nothing pathological. There was some dysphagia which had recently become more marked. The only other point that seems to call for notice was one which Dr. Alexander communicated to me but which I did not notice in hospital, that the left side of the face would swell if he lay on his left side.

The patient was treated with morphine, iodide of potassium, &c., but the treatment presents no features of interest except that he may be said to have improved somewhat. On Feb. 3rd, 1904, he seemed as well as usual. On the 4th he asked for the night-stool but did not use it, for he was at this moment seized with an attack of coughing and then suddenly complained of an acute pain in the cardiac region, his face and lips became blanched, the

pulse at the wrist disappeared, his respirations became rapid, from 60 to 70 per minute, and the stridor mentioned earlier disappeared. Dr. Ridewood was opportunely in the ward and saw him at once; he noticed the above points and naturally thought the aneurysm had ruptured into some natural sac; he examined him as carefully as the condition would allow and noted that there was no sign of fluid in either pleura nor was there any alteration in the pulmonary physical signs. There was no increase in the area of cardiac dulness, the heart was acting regularly and quietly, about 85 per minute, and the sounds were quite clear and well heard, contrasting, as he remarks, strongly with the absence of radial pulse. No bruit was heard, the patient did not vomit, there was no hæmoptysis, in fact, the above points—pallor, rapid breathing, and absent pulse—were the only indications of some accident. He remained for some time without change and then the respirations became of a sighing character and he died as nearly as possible two hours after the pain suddenly seized him.

Necropsy.—Post-mortem examination revealed an aneurysm of the ascending and transverse arch of the aorta of about the size of a small orange which had ruptured into the pulmonary artery; the ruptured aperture was large enough to admit the tip of the little finger and was situated about an inch or rather more from the pulmonary valve well on the heart side of the bifurcation of the pulmonary artery; the edges of the rupture were evidently fresh. This aneurysm showed no laminated clot; it did not involve the aortic valves; these were quite sound as far as ordinary appearance would show; it reached backwards so as to press upon the bifurcation of the trachea, thus explaining the dyspnœa and dysphagia. On the posterior surface of the abdominal aorta was a second aneurysm just opposite the origin of the cœliac axis; this was of about the size of a hen's egg, typically sacculated, and filled with laminated clot; it had eroded the vertebral column, making for itself a nest as it were; this cleared up satisfactorily the pain in the back, though it had given no other indication of its presence. The heart was slightly larger than usual but showed no other pathological condition to the naked eye; the valves were healthy. The spleen weighed 17 ounces and was very adherent to the diaphragm. The liver weighed 74 ounces and was adherent to the diaphragm. The kidneys were practically healthy. Of the lungs, the right was slightly œdematous and showed a small patch of tiny subpleural ecchymoses; these without close scrutiny might have escaped observation and except for them there was not the slightest trace of any unusual ante-mortem changes in the circulation through either lung. This was particularly noticed owing to the nature of the accident that had caused death. The left lung was in a peculiar condition of fibrosis (there was no trace of this in the right one). I am indebted to Dr. Salaman, acting director of the pathological institute of the London Hospital, for the following careful description of it which adds greatly to the interest of the case.

Note by Dr. SALAMAN.—The left lung was firmly adherent to the chest wall; the pleura was thickened, especially along a line corresponding to the necks of the ribs behind. The fibrous tissue of the thickened pleura did not extend into the lung tissue. The bronchial glands were not enlarged and except for some anthracosis were normal. On section the whole lung tissue, although aerated throughout, was found to be uniformly dense and fibrotic; the fibrous tissue was to the naked eye more obvious at the root of the lung and along the track of the bronchi. There was no caseation nor puckered scar anywhere.

Microscopical examination of the tissues at the root as well as of those along the free margin of the lung showed a very definite fibrosis of the alveolar tissue brought about by granulation tissue in the septa and alveolar walls which had spread in from the large collection of older granulation of fibrous tissue accumulated around the bronchi and vessels. In many places, both in sections of the lung at the root and at the free margin, groups of condensed granulation tissue were met in which were numerous large giant cells sometimes surrounded by definite epithelioid cells and sometimes by more dense fibrous tissue. The giant cells were mostly very large and contained some 20 or more peripherally arranged nuclei. Some giant cells were smaller but they also contained a large number of nuclei. 18 preparations were most carefully searched for tubercle bacilli without success. In the younger granulation tissue at the periphery of the older nodules there were very many alveoli inclosed which, although possessing no lumina, still were lined by well-preserved cells whilst occasionally the appearances strongly suggested a new formation of epithelial tubular structures—such an apparent or real formation I have noticed in an undoubted specimen of syphilitic lung disease. In no section was there any sign of caseous degeneration. The blood-vessels, except for the marked periarteritis, were normal.

The result of the macroscopic and microscopic investigation tends to the view that the cirrhosis of the lung is syphilitic in origin; such a change in the lung in acquired syphilis is of the greatest rarity, and it is interesting to note that the condition was present in one lung only. The morbid change is very different from the one observed in congenital syphilis where both lungs are uniformly involved and the cirrhosis is not essentially bronchial or vascular in its distribution.

Note by Dr. SMITH.—Aneurysms of the aorta bursting into the pulmonary artery seem to be very rare. Ziegler mentions the incident as occasionally occurring but I could nowhere find a detailed account of the symptoms arising from it, which must be my excuse for a somewhat prolix account of the present case. Dr. G. Newton Pitt informs me that he has met with a case which lived for three weeks after communication had been established and in which a secondary aneurysm arose in the pulmonary artery. It is to be hoped that he will place the case on record. In my case, judging by the absence of pulse at the wrist, aortic blood pressure must have very rapidly sunk to the level of that in the pulmonary artery and death must have ensued from imperfect distribution of blood to the brain which was rapidly starved. Speculation on this point is more of physiological than clinical interest.

Harley-street, W.

THE TREATMENT OF HYPERTROPHIC PHARYNGITIS AND LARYNGITIS BY THE EMANATIONS FROM THORIUM NITRATE.

BY J. GORDON SHARP, M.D. EDIN.

IN October, 1902, I attended a man, aged 36 years, in an attack of left-sided pleurisy with a small amount of effusion which cleared up in six weeks' time without tapping and caused no subsequent trouble. During this period he had persistent cough and brought up small quantities of white frothy mucus. This was examined by a competent authority on one occasion but no tubercle bacillus could be found. The patient had only lost some four or five pounds in weight. Despite the negative bacteriological result the case was suggestive of tubercle. He spoke in a husky tone and complained of "weakness in his voice" when he talked much. This huskiness had existed for ten years, he said, and at the time of its onset he sought advice for the trouble at Guy's Hospital and stated that he was there treated with cod-liver oil emulsion but could give no more definite information on the subject.

As soon as the man was able to come to my house I examined the nose, pharynx, larynx, and neighbouring parts. There was nothing of note wrong in the nose but the soft palate and pillars were studded with yellowish tubercles in size rather less than the dimensions of a pin's head and set in a red mucous membrane. These tubercles were not enlarged lymph follicles but might have passed for the bodies seen in miliary tuberculosis of the pharynx. When the tongue was pulled forward the lingual tonsil was seen to be much hypertrophied. The back wall of the pharynx presented the usual appearances of a chronic inflammation and the epiglottis was red and enlarged. The interarytenoid region was infiltrated with dark red tissue and here also could be seen the same yellow bodies found on the soft palate. No ulcer was detected. The ventricular bands were swollen, extending so far towards the middle line as to prevent the vocal cords being seen. Here also were to be seen one or two yellow tubercles. As may be expected there was a chink between the true cords on account of the interarytenoid swelling. All the parts, including the interior of the larynx, were covered by a whitish, sticky secretion. To come to an exact diagnosis of the pathological condition was a matter of great difficulty.

Although there was absence of pallor and of ulceration I was inclined to look upon it as tuberculous laryngitis of the indurative type. On the other hand, the case presented some of the features of lupus. For a long time I regarded the condition as tuberculous of very slow growth and others who saw the case regarded it in the same light and as such I treated it. However, a lengthened experience of it leads me to the view that it is chronic inflammatory which may at any time take on a tuberculous character. If I am to fit it into a class I shall call the laryngeal affection hypertrophic laryngitis (pachydermia diffusa) although I have difficulty in explaining the presence of the yellow tubercles.

Treatment.—Assuming then that the affection was tuberculous the treatment was (1) general by generous dietary and cod-liver oil, and (2) local by the application of glacial acetic acid to the soft palate, pillars, and the glottis, beginning with a 10 per cent. solution twice a week and gradually increasing to full Pharmacopœial strength in six weeks' time. For two months the full strength acid was applied twice weekly, making a three and a half months' trial of the acid twice a week. During the next three months the full strength acid was applied on six occasions only and at varying intervals of time. Probably had I looked upon it as simply inflammatory applications other than glacial acetic acid might have been employed with greater benefit.

Result of glacial acetic acid treatment.—The yellow tubercles had almost all disappeared from the soft palate and pillars and there was some loss of tissue. The infiltration in the interarytenoid region had become less and the swelling of the ventricular bands had considerably diminished and a partial view of the true cords could be obtained. On the whole there was great improvement, although the condition was far from well. The hypertrophy of the lingual tonsil caused no annoyance and was not treated. The man's general condition was unchanged. There was no chest trouble and he was able to follow his employment but had often to go to bed at night as soon as he had had his supper—in short, he was easily tired out. It looked as if no further benefit could be obtained from the acetic acid and I lost sight of the patient for some months.

Treatment by the emanations from thorium nitrate solution.—On Jan. 23rd, 1904, the patient again called to see me and on examination I found the parts much as I have described and I decided to try the effect of emanations from neutral thorium nitrate solution. I procured an all-glass inhaler, holding 500 cubic centimetres (about 17½ ounces) and fitted with special glass caps. This I partly filled with water and added to it 100 grammes (about three and a half ounces) of neutral thorium nitrate and shook till the salt was dissolved. The man was instructed to inhale for one hour every day and always at the same time of the day and he was told to keep a daily record of any pain or discomfort which he might experience during the exercise. He began on Jan. 24th and inhaled for one hour daily for a month with two or three exceptions when he had to curtail the time or to desist altogether on account of "aching of the throat." On one occasion his report reads: "Throat and chest very sore indeed." Gradually he got accustomed to the treatment and experienced no inconvenience. At the end of a month I examined the parts and found a decided improvement and told him to go on with the inhalations for another fortnight, making six weeks in all. I again examined the pharynx and larynx and the first thing that impressed me was the healthy condition of the back wall of the pharynx. This part had received no direct treatment when the acid was being applied to the palate and glottis. To resume, the pharyngeal wall was covered with healthy secretion and the nodules had almost all disappeared. The next striking feature was the diminution in the lingual tonsil. On inspecting the glottis I could see that the interarytenoid swelling had so far diminished that the cords could be adducted in their entire length and the ventricular bands had so far returned to their normal state as to enable me to see the vocal cords. It will be interesting to watch the further progress of this case. I have the impression that tubercle will ultimately develop.

Are the good results due to the emanations from the thorium? To this question I am not going to give a positive answer but I feel encouraged to give the treatment further trial and I hope others will be led to adopt this comparatively new line of therapeutics.

Leeds.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE USE OF MUCOUS MEMBRANE FROM FROG'S MOUTH FOR GRAFTING IN A CASE OF SYMBLEPHARON.

BY LESLIE PATON, B.A., M.B CANTAB., F.R.C.S. ENG.,
ASSISTANT OPHTHALMIC SURGEON, ST. MARY'S HOSPITAL.

THE patient, a man, aged 31 years, was admitted into St. Mary's Hospital in June, 1903, suffering from orbital cellulitis. There was marked exophthalmos with great œdema of the lids and surrounding tissues. On operation a considerable quantity of pus was let out and the orbital tissues were freely drained by means of four tubes. At the time of operation some of the ocular muscles on the upper and outer parts of the eye were exposed and were seen to be of a dirty brownish colour. The cellulitis subsided uneventfully and in about a month he was discharged from the hospital. At the time of leaving the lid tissues and the conjunctiva were hypertrophied and the lower lid was attached firmly to the eyeball in almost its whole extent, only a space of about three millimetres being free at the outer canthus and about two millimetres from the punctum at the inner angle. At those points a probe could be passed down for a short distance but it could not be passed laterally in either direction. The line of attachment touched the lower margin of the cornea. The lashes seemed to have been destroyed completely. By September the hypertrophy had completely subsided and the upper lid was normal in appearance. Owing to the complete attachment of the lower lid to the eyeball, however, there was very great limitation of movement and there was diplopia in every movement, so that the right eye had to be covered constantly.

The patient was admitted again in September for operation. It was obvious that a large amount of mucous membrane would be necessary to form a conjunctival sac for his lower lid and I came to the conclusion to try whether the membrane from the roof of a frog's mouth would be suitable. Three frogs were used and from these three flaps were prepared, the largest being about two centimetres in length by one centimetre in breadth; the other two, from smaller frogs, were approximately the same breadth but shorter. These were kept in warm sterilised saline solution while the eye was prepared. In dissecting the surfaces care was taken to leave any normal conjunctiva attached to the ocular surface. The dissection was carried down until over a centimetre of raw palpebral surface was exposed. To this the larger piece of mucous membrane was attached by four fine silk sutures along the upper margin, the lower margin being left unattached. The other two pieces of mucous membrane were similarly sewn to the fringe of conjunctiva on the ocular surface. They were carefully arranged in position and a piece of green protective was pushed in and the eye was closed and bandaged. On the sixth day the protective was taken out and the stitches were removed. All three grafts had taken, the palpebral one and the outer ocular one perfectly, the inner ocular one not quite so well, and at the line of its suture there was a fleshy granulation. The movements of the eye were now free except that on extreme movement outward there was some diplopia.

At the time of writing (March, 1904) the appearance of the eye is almost normal. There is an irregularity of the lower lid margin which, however, is not marked. On pulling down the lower lid at the inner margin there is one cicatricial band passing to the eye about a centimetre in length and about three millimetres in breadth. In the rest of its extent the conjunctival sac is almost normal in appearance. The cicatricial band limits the outward movement of the right eye to some extent and I propose to do a further slight operation to free that. I believe that frog's skin has been used frequently for skin grafting. The above case shows that where extensive mucous membrane grafts are

required the readily available frog can be brought in to spare the mucous membrane of the patient's own mouth.

Manchester-square, W.

ANTHRAX INFECTION OF A COMPOUND FRACTURE.

BY PETER PATERSON, M.B. GLASG., M.R.C.S. ENG.,
ASSISTANT SURGEON, GLASGOW ROYAL INFIRMARY, ETC.

THE unusual feature in the following case of compound fracture is the infection of the wound with the anthrax bacillus.

The patient was a man part of whose work was to mix animal's hair with lime to make plaster for walls, &c. Whilst at work he received a compound fracture of the lower part of the right humerus by the jib of a crane falling and striking him on the arm. When examined a large wound was found about the middle third of the upper arm leading down to a comminuted fracture of the humerus. The radial pulse was present but sensation was diminished beyond the injury. The wound was cleaned, packed, and dressed with a wet carbolic dressing. On the following day there was considerable ecchymosis in the axilla and over the scapula and the radial pulse could scarcely be felt. The edges of the wound were dark in colour and there was a considerable discharge of serous fluid. The temperature was 101° F. A little of the exudate was collected for bacteriological examination. Within the next 24 hours a large black slough had formed round the wound and the pulse was absent at the wrist. As the patient's condition was serious the limb was disarticulated at the shoulder. The subsequent history was uneventful and he left the hospital with the parts firmly healed.

Dissection of the limb showed that the main vessels were uninjured but that the nerves were considerably lacerated. Cultures made from the discharge gave a large number of anthrax bacilli and a few staphylococci. The cessation of the pulse was probably due to the rupture of a vessel high up and the pressure of the effused blood occluding the lumen of the main trunk. As regards the origin of the anthrax bacilli it is highly probable that they were present in the hairs with which he was working and that his skin or clothes had become infected from this source and that some of the organisms had been driven into the wound at the time of injury.

Glasgow.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

MANCHESTER ROYAL INFIRMARY.

A CASE OF CICATRICIAL PYLORIC OBSTRUCTION; PYLOROPLASTY; HÆMATEMESIS FROM A SECOND ULCER; OPERATION; RECOVERY.

(Under the care of Mr. G. A. WRIGHT and Mr. J. E. PLATT.)

FOR the notes of the case we are indebted to Mr. W. F. Shaw, house surgeon.

The patient, a married woman, aged 26 years, was admitted to the Manchester Royal Infirmary on Dec. 3rd 1903, under the care of Mr. Wright, with a long history of gastric trouble. Two years previously she began to suffer pain after food and this had been much worse during the last year; the pain came on ten minutes after taking food and was of an aching and shooting character, situated in the epigastrium. She also vomited and was constipated. She had no flatulence, jaundice, hæmatemesis, menstrual irregularity, or urinary trouble. She had noticed a lump to rise in the epigastrium; occasionally this got very hard and then disappeared. She had lost 14 pounds in weight during the last year but had taken no solid food during that time.

On admission the patient was found to be a small, very thin woman. The abdomen was retracted but moved with respiration. There was great tenderness about two inches above the umbilicus in the middle line and in this position could be felt a mass of about the size of a Tangerine orange. The patient was so thin that the bodies of the vertebræ and the abdominal aorta could be palpated easily. The stomach was so dilated that the greater curvature was about the umbilicus.

An operation was performed by Mr. Wright on Dec. 11th. A vertical incision being made in the median line from the ensiform cartilage to the umbilicus the stomach was exposed. The mass which had been felt prior to operation was found to be due to a very much thickened pylorus. On the anterior surface of the stomach, a little to the pyloric side of the centre, were two white patches, evidently cicatrices of old ulcers. A horizontal incision about one and a half inches in length was made through the thickened pylorus and the wound was closed transversely as usual in a pyloroplasty. The abdominal wound was then closed and the patient was put back to bed. On the 12th, the day after the operation, the patient vomited four or five ounces of coffee-ground vomit and again on the 14th after taking some bovril. She also had a good deal of epigastric pain. A nutrient enema of two ounces of brandy and two ounces of bovril was administered on the evening of the day of operation and for the next two days every four hours. In addition the patient had a little sherry and water on the second day and beef-tea on the third day by the mouth. Owing to the hæmatemesis all nourishment was stopped on the fourth day; but as there was no recurrence nutrient enemata were given on the fifth day every four hours and bovril and wine by the mouth on the sixth day. The patient continued better until the 20th, when she had a return of the hæmatemesis, as also on the morning and afternoon of the 21st. Mr. Wright saw her in the morning and again in the afternoon as further operative measures seemed necessary. She was given 20 minims of adrenalin at half-hourly intervals for three doses and as the vomiting now ceased and the patient was in a very bad condition for operation it was decided not to disturb her. The hæmatemesis returned rather severely about 11 P.M. and continued at intervals until about 12.30 A.M., at which time Mr. Platt operated on her. He opened up the old abdominal and gastric wounds, finding both healthy, and found a fresh ulcer, about one inch long and a quarter of an inch broad, with irregular edges and only extending through mucous membrane, on the anterior surface of the stomach. He invaginated the wall of the stomach so that the ulcer presented in the pyloroplasty wound, closed the ulcer with sutures passing only through the mucous membrane and then closed the old gastric and abdominal wounds as before. After the operation the patient again vomited some blood and was given three doses of adrenalin, 20 minims, at half-hourly intervals, and as she was collapsed five minims of liquor strychninæ were injected every four hours for two days and every six hours for another day. On the day after the operation the patient had neither nutrient enemata nor food by the mouth, but on the second day enemata were administered and on the third day a little bovril and wine and water were given by the mouth. From this time the food was gradually increased and on Jan. 9th, 1904, chicken was allowed for the first time. The patient progressed steadily after the second operation, having no return of the hæmatemesis, and was discharged in a very fair condition on Feb. 1st. She was last heard of on March 25th, at which date she wrote to say that she felt very well and was getting fat.

Remarks by Mr. WRIGHT.—The interest of this case is, of course, in the recurrent bleeding, presumably from a second ulcer on the anterior wall. It is a question whether, on the one hand, this should have been anticipated at the first operation or, on the other, whether a gastro-jejunostomy instead of a pyloroplasty would have been the better operation.

GOVERNMENT CIVIL HOSPITAL, HONG-KONG.

A CASE OF RUPTURED SPLEEN PRESENTING FEATURES OF UNUSUAL MEDICO-LEGAL INTEREST; SPLENECTOMY; DEATH.

(Under the care of Mr. E. A. R. LAING, assistant superintendent.)

A CHINESE boy, aged 18 years, was taken to the Government Civil Hospital by the police at 12.40 A.M. on Jan. 22nd last with a history of having been injured during a gambling raid at 7 P.M. on Jan. 21st, or nearly six hours

previously. He was not struck but in his haste to get away from the police he was knocked down in the rush and trampled on. He was arrested as a gambler, conveyed to the police station, and as he complained of some abdominal pain he was taken to hospital after a two hours' journey from the New Territory. He was a badly nourished narrow-chested youth, about 90 pounds in weight.

On admission his temperature was normal; the pulse was 120 and good. The abdomen was slightly tympanitic in front and in the flanks; some gurgling was felt on pressure. The patient was put to bed and spent a good night. Lead and opium fomentations were applied to the abdomen. On the following morning his bowels were opened twice with an enema. The temperature was 98·2° F., the pulse was 120 and improved, and as he had not passed urine during the morning ten ounces were drawn off with a catheter. The abdomen still remained tympanitic all over; change of position made no difference.

It was decided to watch the case. There was no shock; the patient was chatting with his neighbours and would have sat up in bed if allowed. Fomentations to the abdomen were continued and the diet consisted of milk, beef-tea, and rice-water. At 8 P.M. the temperature reached 100°, the abdomen was more distended, and the pulse was not improving, so it was decided to make an exploratory incision as it was suspected that the spleen was ruptured. At 9 P.M. Dr. W. V. M. Koch kindly administered chloroform and with the assistance of Mr. J. Bell the abdomen was opened with a two-inch incision midway between the pubes and the umbilicus. A gush of blood followed the opening of the peritoneum and distended coils of small intestine filled the wound. The incision was rapidly prolonged upwards to the left of the umbilicus and the spleen was examined. It was a large one of the malarial type and a rupture was easily felt at the posterior border. The pedicle was ligatured with strong silk and a spleen weighing 2 pounds 3¼ ounces was removed. The peritoneal cavity was quickly cleansed of blood, filled with saline solution, and the abdominal wound was closed. An injection of 15 minims of strychnine was given hypodermically after the operation. The patient passed a good night and appeared to be recovering from shock. Morphine, strychnine, and camphor were given hypodermically at intervals. The temperature was 97° and the pulse was 130. He felt inclined to vomit. At 9 30 P.M. he vomited once, bringing up some brownish "coffee-ground" vomit. The pulse was then 142 and thready and the temperature was 100°. Nutrient enemata were given every six hours and retained. Champagne only was given by the mouth.

On Jan. 24th the temperature was normal and the pulse was 120. The patient conversed with the Chinese ward boys. He vomited frequently during the night, "coffee ground" vomit on each occasion. Towards evening he seemed to be improving rapidly; he only vomited once during the day. He took a little milk by the mouth and retained it. The nutrient enemata were partially returned. The vomit examined microscopically showed altered blood corpuscles and blood pigment. The patient, in spite of steady improvement during the day, gradually sank during the night and died at 10 45 A.M. on the 25th.

Necropsy.—Post-mortem examination showed that the pedicle ligature had held well; there was no sign of even commencing peritonitis. The stomach was much distended and full of brown fluid and its mucous membrane was dotted with minute petechiæ, like flea-bites. The contents of the stomach consisted of altered blood and gastric secretion. The intestines and their contents were normal. All the other organs were healthy.

Remarks by Mr. LAING.—My reason for recording this case is that it is of interest from both a surgical and medico-legal point of view. Undoubtedly the patient's death was due to persistent hæmatemesis following abdominal section. Such cases are undoubtedly rare and a few have, I believe, been recorded, but I am not able just now to quote them in detail. Why petechial hæmorrhage should begin after abdominal section in an otherwise healthy stomach I am unable to determine. No injury was done to that organ when removing the spleen as it was easily displaced upwards for the purpose. The patient recovered well from the shock of the operation and it was naturally a disappointment to lose such a case from such a cause.

That a man can live with little or no discomfort for 26 hours with a ruptured spleen is of considerable medico-legal interest. Had the police not arrested the patient I daresay he would not have had any medical or surgical attention whatever but would have bolted for his native village and have died in due course. The rupture was one of three inches long, just through the capsule, so that the hæmorrhage was slow but sure. The accompanying tympanites made the diagnosis difficult even here where ruptured spleens are fairly common and have been removed successfully.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

On the Value of a Comparative Examination of the Blood and Urine.—The Bacteriological Findings in a Case of Climatic Bubo.—A Case of Bacillus Pyocyaneus Pyæmia following Ear Disease.

A MEETING of this society was held on April 19th, Dr. E. KLEIN, Vice-President, being in the chair.

Dr. A. E. WRIGHT read a paper on the Comparative Examination of the Blood and Urine. He said that his communication was to illustrate the practical use of a method which he and Dr. J. Newport Kilner had recently described and published in THE LANCET for estimating the amount of salt in the blood and the amount of salt in the urine.[1] He first described the method by which he estimated the quantity of salt in the blood and in the urine. He said that in judging of the efficiency of the kidney there were two points to consider: (1) the capacity of the kidney to eliminate salt from the blood; and (2) the capacity of the kidney to eliminate water from the blood. He had found in a case of urticaria in which there was a considerable quantity of albumin in the urine that the excretory efficiency of the kidney for salt was practically normal and at the same time he found that the coagulation period of the blood was prolonged to five minutes and that the lime salts were diminished. He therefore concluded that the albumin in the urine was due to a serous hæmorrhage into the kidney and not to structural disease of the organ. He pointed out that a diminished quantity of lime salts in the blood produced a diminished coagulability and such a diminution of lime salts was brought about by the introduction of soaps, sour alcohol, sour fruit, and gooseberries, and this accounted for the production of urticaria after the ingestion of these articles. Dr. Wright mentioned the case of a boy with physiological albuminuria in whom the excretory quotient for salt was normal, and he stated that in all cases of renal disease he had found the excretory quotient of salt to be less than normal.

Mr. J. CANTLIE and Dr. R. T. HEWLETT described the Bacteriological Findings in a case of Climatic Bubo. Mr. Cantlie said that the climatic bubo was probably a form of plague or pestis minor. He had seen numerous cases in 1893 and the disease usually appeared before plague and continued during and after that disease had stopped. It attacked the white race in particular. It was a definite disease which ran its course with fever in from three to four weeks. The glands enlarged and had to be excised. They contained several foci of necrosis with but little pus. The disease could not be arrested by early excision of the glands; in fact, it was best to wait for two or three weeks before excising them. Mr. Cantlie distinguished between pestis minor and pestis ambulans, for in the latter the definite plague bacillus could be found. Mr. Cantlie and Dr. Hewlett then described the results of a bacteriological examination of the case of climatic bubo. The patient, who had come from Kolar Goldfields, had a condition of the inguinal glands which was seen by several acquainted with the disease who all agreed that it was one of climatic bubo. A gland was excised and examined. Two species of cocci were obtained (probably micrococcus pyogenes albus and micrococcus cereus albus) and also a minute bacillus. This was somewhat like the plague bacillus but perhaps rather more pointed and about half the size. It stained well by Gram's method but indifferently with the ordinary aniline dyes, with a tendency to polar staining. It was probably feebly motile and did not form spores. On agar it formed an extremely delicate growth, resembling that of the pneumococcus. It grew on gelatin very slowly, forming a white growth without liquefaction. On serum at 37° C. the growth was much more luxuriant, forming colonies like those of the diphtheria bacillus but whiter in colour.

[1] THE LANCET, April 2nd, 1904, p. 921.

Milk was curdled in three or four days. Glucose was feebly attacked with the formation of a little acid and gas but lactose did not appear to be attacked. Broth became slightly turbid but the major part of the growth sank to the bottom. The bacillus was without action on mice and guinea pigs and was not agglutinated by the patient's blood. Whether this bacillus had anything to do with the disease or not must be left an open question. The chief interest in connexion with it was that it agreed in its characters very closely with the description of a bacillus isolated by Kitasato in plague.[2]—Dr. KLEIN said that he hoped on the next occasion that Mr. Cantlie had an opportunity he would examine the glands so as to show how the organism was distributed within them. He said that there was considerable variation in the organism described by Kitasato and it was difficult to conceive how two organisms so essentially different as the plague bacillus and the Kitasato bacillus could be varieties of the plague bacillus.—Dr. W. J. R. SIMPSON said that he had met with a bacillus similar to that described in certain cases and had not infrequently seen the disease in Cape Town. In a cat infected with plague this bacillus was found and the man to whom the cat belonged was also affected with plague but to a mild degree. Exactly the same organism was found in the glands removed. This form of bubo seemed always to occur some time before the onset of true plague.—Dr. WRIGHT said that he did not think that this bacillus should be considered as a variety of the plague bacillus. There was but one plague bacillus. In the present case Mr. Cantlie and Dr. Hewlett had described two forms of micrococcus and this small (Kitasato) bacillus, and it was not proved that the enlargement of the glands was due to this organism. He did not think that there was any evidence that pestis minor could develop into plague.—Dr. W. D'E. EMERY said that an organism having similar characters had been obtained from acne and skin lesions and suggested that in the present case it might have had a similar origin.

Dr. T. J. HORDER described a case of Bacillus Pyocyaneus Pyæmia following Ear Disease. The bacillus pyocyaneus might be pathogenic to man as the partial or sole cause of abscesses, as setting up a form of dysentery, or as (rarely) causing a general infection. The case recorded was one of these last. The patient was a man suffering from otitis media of long duration. He was admitted to hospital for fever, severe headache, and delirium. Diarrhœa set in a week later. There were no signs of cerebral disease. Widal's test was twice negative and there was a leucocytosis of 32,000. Emaciation was very marked. The fever was not high but was continued in type. During the fifth week of the patient's illness paraplegia appeared. Death occurred at the end of this week. At the post mortem examination the brain and the membranes were natural. Green pus was found in both middle ears, in several abscesses in the lungs, and in a large abscess of the spinal meninges. From this pus the bacillus pyocyaneus was grown in pure culture, pathogenic to animals and giving the usual cultural reactions of this organism.—Dr. W. BULLOCH said that it was possible that the general infection might have taken place after death from the point of infection in the ears. He had frequently seen spastic paraplegia come on in the course of bacillus pyocyaneus poisoning but he had no explanation of the disease. It was extraordinary that the bacillus pyocyaneus was not more pathogenic to man as it was so markedly pathogenic to animals.—Mr. L. S. DUDGEON said that he had seen two cases of bacillus pyocyaneus infection; in one of the cases he had been able to find the organism in the blood during life.

LIVERPOOL MEDICAL INSTITUTION.

Carcinoma of the Œsophagus: Gastrostomy.—Excision of the Gasserian Ganglion.—The Technique of Aseptic Surgery.

A MEETING of this society was held on April 14th, Dr. JAMES BARR the President, being in the chair.

Dr. PHILIP NELSON related a case of Carcinoma of the Œsophagus which occurred in a woman 50 years of age. Difficulty in swallowing had only existed for three months but had rapidly increased. Her voice was hoarse and there had been several attacks of laryngeal spasm. Upon examination there were found to be complete paralysis of the left vocal cord and abductor paralysis of the right cord. An œsophageal bougie became arrested at a point opposite the cricoid cartilage. Gastrostomy was performed by Mr. F. T. Paul in June of last year. The patient obtained marked relief from the operation and all went well until January of this year when she died. Subsequent examination showed that the growth had opened into the trachea and the right lung was the seat of a large abscess.

Mr. DAMER HARRISSON related two cases in which he had removed the Gasserian Ganglion for Paroxysmal Neuralgia. The first case was that of a man, 45 years of age, who for years had suffered from severe neuralgia corresponding to the distribution of the inferior dental and infra-orbital nerves. The inferior dental nerve was exposed in the bony canal and a portion of it was excised; the infra-orbital nerve was exposed and stretched. The operation was followed by complete relief of the symptoms. Some months later, however, there was a return of the neuralgia and Mr. Harrisson, after reflecting the zygoma, exposed and tore through the middle and inferior divisions of the fifth nerve. Pain was relieved for ten months but then returned again. Finally the Gasserian ganglion was excised by Rose's method. This operation was performed seven and a half years ago and since then there had been no return of the neuralgia. In the second case the neuralgia was confined to the distribution of the inferior dental nerve which Mr. Harrisson exposed near the base of the skull and tore through. Marked temporary relief followed, but some months later, owing to a return of the neuralgia, the Gasserian ganglion was excised by the same method as in the previous case. This operation was performed in 1896 and the patient had been entirely free from pain ever since.

Mr. PAUL, in opening a discussion on the Technique of Aseptic Surgery, said that the recent changes in the treatment of wounds did not constitute a revolution like the introduction of Listerism but they were unquestionably very important and he thought that there were many advantages in discussing the details of their practice. He first dealt with the preparation of the skin of the patient and said that there was a strong tendency amongst surgeons to leave this important matter too much to the discretion of the nurses. The hands of the surgeon were next considered. For his own part he employed the permanganate method and was well satisfied with it. Except in septic cases he did not wear rubber gloves but his assistants did. For ligatures and buried sutures he much preferred catgut, prepared according to a method he described, to silk and for skin sutures he used silkworm gut. He did not hesitate to employ drainage in the form of a glass tube or gauze if there was any reason to expect an accumulation of serum in the wound. For dressings he preferred plain sterilised gauze and absorbent wool. In conclusion, he said that while the introduction of Listerism had been the means of saving many lives the introduction of the aseptic method had been the means of saving much time in the more perfect healing of wounds.—Sir WILLIAM M. BANKS said that he had followed the whole course of antiseptic surgery from 1865, when he had learnt its tenets from Professor Lister, until to-day and had practised it in every phase of its development. More and more it was resolving itself into simple but thorough surgical cleanliness. He deprecated the lavish expenditure upon modern operating theatres and said that he found his operations done in private just as successful as those done in the most elaborately built hospital theatres. He boiled everything that came in contact with the wound and for this reason preferred silk to catgut as a ligature. As to skin cleansing, if the skin was well shaved a good scrubbing with any mild antiseptic was all that was necessary. He had a strong opinion that aseptic surgery would soon resolve itself into boiling everything that could be boiled and shaving everything that could be shaved.—Mr. W. THELWALL THOMAS thought the term aseptic when used as opposed to antiseptic unfortunate; there was no such thing as aseptic surgery in the strict sense of the term for every surgeon used chemical antiseptics for the skin. He was convinced that the deeper parts of the skin were never rendered sterile and was an ardent advocate for the wearing of rubber gloves by the surgeon and his assistants. He considered the question of aerial infection to be a negligible quantity in private practice but in hospital theatres, where septic and clean cases were operated upon, it was a matter for serious consideration, and he strongly approved of the principle of special theatres and wards for septic cases.—Mr. G. P. NEWBOLT compared the results of 126 consecutive cases of hernia operated upon without and with rubber gloves, the conditions otherwise being the same. In the first series 1 case in 5 suppurated. In the second

[2] See Twentieth Century Practice of Medicine, vol. xv., p. 331.

series suppuration occurred in 1 case in 7.—Mr. GEORGE G. HAMILTON said that he had performed 125 major operations since May last and in only five of these had suppuration occurred.—Mr. F. C. LARKIN, Mr. DAMER HARRISSON, Dr. W. ALEXANDER, Dr. H. BRIGGS, Dr. T. B. GRIMSDALE, Mr. RUSHTON PARKER, Dr. J. E. GEMMELL, and Dr. E. T. DAVIES also took part in the discussion.

ULSTER MEDICAL SOCIETY.—A meeting of this society was held on April 7th, Dr. John Campbell, the President, being in the chair.—Dr. Thomas Houston showed a case of Friedreich's Ataxia.—Dr. W. Calwell read a paper entitled "Some Observations on 193 Cases of Gastric Ulcer." He drew attention to the large number of ulcers relatively to the total number of affections of the stomach, for of 311 cases of diseases of the stomach 193 were ulcers. The probable reasons for such a preponderance were that the terms "indigestion" and "dyspepsia" were now dropped as signifying a substantive disease and were employed as a syndrome of symptoms common to many affections of the stomach. Acute and chronic catarrh, neurosis, and gastric ulcer were the three main affections in early life and of these by far the commonest before the age of 25 years was gastric ulcer. On including those cases of stomach trouble in young women with the signs and symptoms of ulcer, except hæmatemesis, there would be no difficulty in understanding the enormous rise there is during the ages from 15 to 25 years and also the large number of cases of ulcer relatively to the total number of cases of stomach trouble. A chart formed on this basis with the sexes marked independently showed that in the female no cases began before the age of 13 years; that the line then rose very rapidly, reaching a maximum from 17 to 19 years and fell as quickly, so that at 25 years of age there were comparatively few in the first onset; after this age cases occurred but in no great numbers. In the male practically no cases occurred before the age of 25 years (only some three were found in a total of 193); after the age of 25 years the curve was much the same as in the female. Thus there would be (1) a developmental type and (2) a post-developmental type. The former closely followed the laws of chlorosis which was confined to the female and the onset of which occurred practically between the ages of 13 and 28 years. Many cases of chronic ulcer were greatly relieved by rest in bed but with immediate return of symptoms on returning to the erect position; this was probably due to adhesions and to the kinking that took place between the first and second, or fixed, portion of the duodenum when the stomach sagged a little on the patient getting up. Sudden onset of hæmorrhage occurred in eight cases with little or no premonitory warning; in one case a small, clear-cut ulcer was discovered over a large blood-vessel. In older patients the question of œsophageal varices should be entertained as well as cirrhosis of the liver. Every girl with dyspeptic symptoms, especially if she were chlorotic, should be promptly treated as suffering from ulcer; she should rest in bed and have milk diet. True dilatation was not often, if ever, met with unless from an organic stenosis; if it were stubborn to ordinary measures nothing was so successful as a gastro-jejunostomy.—Dr. A. Dempsey spoke of the advantage of a powder of magnesia, bismuth, and soda and of, later, oxide of silver in ulcer of the stomach.—Sir William Whitla thought that the pendulum had swung too much in the direction of attributing affections of the stomach to gastric ulcer.—Professor J. A. Lindsay spoke of the value of localised tenderness on abdominal examination as a sign of gastric ulcer. He deprecated hasty surgical interference in stomach affections.—Professor J. W. Byers said that what was wanted now was to follow the lead of the continental practitioners and to get more information as to the chemistry of abnormal digestion.

SHEFFIELD MEDICO CHIRURGICAL SOCIETY.—A meeting of this society was held on March 31st, Mr. J. H. West Jones, the President, being in the chair.—Mr. Edward Skinner showed a large Sarcomatous Tumour, weighing 14 pounds, removed post mortem from the abdomen of a man, aged 28 years, who had been under observation for five months. The tumour first showed itself in the right loin. The patient was also the subject of marked molluscum fibrosum of many years' duration.—Dr. A. J. Hall showed: 1. Two cases of Lupus Erythematosus. One was in a middle-aged married woman associated with tuberculous glands in the neck, pleural effusion, and indefinite signs of pulmonary tubercle; the eruption had improved considerably under salicin internally and previously under large doses of urea the glands had considerably diminished in size. The other was in a child, aged 12 years, with a history of recent rheumatic fever, during which the rash became much worse. 2. Lupus Vulgaris in association with Pulmonary Tuberculosis. The course of events had been tuberculous glands on the right side of the neck in childhood, secondary implication of the skin, and extension to the apex of the right lung. 3. Psoriasis in two sisters, showing marked improvement under thyroid gland alone. 4. A case of Herpetiform Dermatitis or Pemphigus. In favour of the former diagnosis was the multiformity of the eruption; against it was the entire absence of pain. 5. Hysteria in a male; there was complete loss of speech with right hemianæsthesia and slight right paresis. The patient was a single middle-aged man who had a fit in the street. On admission to hospital he was unable to utter a sound of any kind but was conscious and able to write out a full account of himself. On being asked to say "Oh" he was able to place his mouth and lips in the proper position but could not make any sound. In a few days speech gradually returned and the hemianæsthesia disappeared.—Mr. Sinclair White showed the following cases and specimens: 1. Four men whose prostates had been removed suprapubically in 1902. Their ages ranged from 61 to 72 years. All were in excellent health and had completely recovered the power to empty the bladder. 2. A series of specimens of Enlarged Prostates recently removed, including one which showed a very marked so-called middle lobe. 3. Two specimens of Cancer of the Mid-rectum recently removed by the transacral route. In both cases the rectum was slit up along its posterior surface as high as the growth and divided transversely from within outwards at least one inch below the cancer. The diseased segment was then dissected from the surrounding tissues until well clear of the upper limit of the growth when the bowel was again divided transversely. The rectal walls were then pulled down and stitched to the anal margin. He had performed Kraske's operation 18 times with four deaths. 4. One Carcinomatous and Three Myomatous Uteri removed by the abdominal route. All the patients made good recoveries. The entire uterus was removed in each case. Unless the patient was stout he preferred the abdominal to the vaginal route for removing cancerous uteri. 5. A Large Sarcomatous Growth of the Lower End of the Humerus which was removed by disarticulation at the shoulder-joint. The axillary glands were also removed as they had become much enlarged. The patient, a young female, made a rapid recovery. 6. A Partial Resection of the Stomach for a Chronic Ulcer of many years' duration situated in the upper border two inches to the left of the pylorus. The stomach walls were much thickened and indurated about the ulcer and as the patient had for some months been losing flesh rapidly it was feared that it might have become cancerous. A Murphy's button was employed to unite the duodenum to the posterior wall of the stomach. One half of the button was introduced into the stomach which was then completely closed by a double row of continuous sutures; a small opening was then made in the posterior wall of the stomach through which the shank of the button was protruded. The patient made an excellent recovery.—Mr. P. E. Barber read notes of a case of Belladonna Poisoning due to the application of a belladonna plaster to the mamma.

SOCIETY FOR THE STUDY OF INEBRIETY.—A meeting of this society was held on April 12th in the rooms of the Medical Society of London, Dr. Harry Campbell, the President, being in the chair.—Dr. Robert Jones, medical superintendent of the London County Asylum at Claybury read a paper on the Relation of Inebriety to Mental Disease. After a reference to the chemical composition of the various alcohols he described the mental effects produced by ordinary alcohol according to the quantity ingested and said that a tendency to the development of illusions of a visual character and to delusions of a persecutory nature was characteristic of the effects of alcohol, as was also the tendency to sudden impulsive movements. He then defined inebriety and divided the class of inebriates into two divisions, the periodic drinker and the more or less constant drinker. The victims of these two classes were of different ages, those in the periodic class being mostly young men who, in the intervals of their paroxysms, were apparently rational and fulfilled their obligations both to society

and to their friends. There undoubtedly was in all inebriates a considerable mental deterioration, as was evidenced by the fact that over 20 per cent. of all the inebriates under treatment in retreats and reformatories were transferred during one year—1902, the last for which there were published statistics from these places—into asylums for the insane. He then gave statistics dealing with the effects of alcohol. He stated that out of the 116,000 cases of insanity at the present time detained in asylums there were probably no less than 11,000 males and 6000 females whose insanity was directly or indirectly caused through drink. He quoted the statistics of the London County Asylums for the ten years 1893-1902 inclusive and stated that during this period 35,916 persons (16,356 males and 19,560 females) had been admitted into these institutions, of whom a proportion of 21 per cent. among the men and 11 per cent. among the women were ascertained to owe their insanity to drink alone, a proportion which accounted for the insanity from this cause of 5727 persons. At Claybury Asylum there had been admitted during the period 1893-1903 inclusive 9544 persons, of whom 1684 (965 males and 699 females) owed their insanity to drink, a proportion of 22·7 per cent. among the males and 13·1 per cent. among the females. He stated that there were over 400 persons at the present time in retreats and reformatories whose detention was caused through inebriety and that this only represented a small proportion of the inebriates in the country, whose presence among the young was most injurious, both directly through their neglect and cruelty towards those for whom they were responsible and indirectly by their evil influence and example. He also referred to the loss to the community from drink through the interference with the working power of the skilled craftsman and the artisan and to the devitalising effect of alcohol on the individual and on the race. His experience of the treatment of "drink cases" in asylums had been a disappointing one as to the actual recovery which took place, for when such patients were discharged they almost invariably relapsed if they tasted alcohol at all and there were only a few who could afterwards go through life without it. The feeling conveyed by alcohol was a stimulation and among the poor it was mistaken for the feeling of nutrition and repletion after a good meal. He believed that there would be less drinking among men if women could be taught how to select food and to cook it properly.

BRITISH GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on April 14th, Professor John W. Taylor, the President, being in the chair.—Mr. J. Furneaux Jordan read notes of a case of Hydrometra in a woman, aged 63 years, from whom 13 years previously a large ovarian cyst had been removed and who had been operated on five and a half years ago for a pyometra; there was an abscess in the scar of the old wound and the uterus was firmly adherent to the scar; a watery fluid exuded from the abscess cavity when the pus had been discharged. He also read notes and showed the specimens from a case of Double Hydrosalpinx in a woman who for ten years had been subject to attacks of abdominal inflammation.—The President remarked that these cases taken together lent some support to the idea that hydrosalpinx might be a rather late stage of pyosalpinx.—Dr. Frederick Edge showed: (1) A Myoma of the Broad Ligament; (2) a Vesical Calculus formed on a hysterectomy ligature; and (3) a Displaced Spleen simulating a broad ligament cyst and removed from the pelvis on account of torsion of the pedicle and impending gangrene.—Mr. F. Bowreman Jessett read notes of a case of Bilateral Dermoid Ovarian Cysts with torsion of the pedicle of the larger and also notes of a case of Fibroid of the Cervix which was so large as to elevate the bladder to within an inch of the umbilicus and which he had removed without any injury to the bladder.—In the discussion of the specimens Dr. H. Macnaughton-Jones insisted that hydrosalpinx might be quite independent of any pyogenic invasion.—Dr. Bedford Fenwick and Dr. Heywood Smith also spoke.—Dr. T. Arthur Helme read a paper upon the Treatment of Eclampsia by Puncture of the Spinal Canal, with notes of a case successfully treated in this way.—The President said that Dr. Helme's views as to the benefits of lumbar puncture would require to be proved by further trials; the paper was, however, not only interesting but important.—Dr. Macnaughton-Jones and Dr. E. H. Hodgson concurred in extolling the effects of pilocarpine and Mr. Jordan and Dr. Fenwick as to those of bleeding in arresting the convulsions of eclampsia.—Dr. Helme, in replying, pointed out that he had not attempted to criticise the action of any drugs and gave some details as to the method of puncture, the woman under chloroform being on her left side with her body so bent as to arch the back.—Dr. Macnaughton-Jones then read a paper upon the Dangers of Pessaries which was illustrated by a comprehensive exhibit of various forms of these instruments and by a series of sections of the female pelvis showing the different displacements of the womb with pessaries properly and improperly inserted. He did not by any means reject the use of supports in all cases and particularly praised that of Galabin and the figure-of-8 pessaries made, as recommended by Schultze, to suit individual cases, out of celluloid rings.—On the motion of Dr. Heywood Smith the discussion of the paper was postponed.

HUNTERIAN SOCIETY.—A clinical meeting of this society was held on April 13th at the London Institution, the President, Dr. F. J. Smith, being in the chair.—Dr. O. K. Williamson showed a case of Morbus Cordis in a child. A loud diastolic murmur was heard beneath the second left costal cartilage and as the pulse was not collapsing in character Dr. Williamson was inclined to attribute this to pulmonary regurgitation. The great hypertrophy of the heart without sufficient valvular lesions to account for it led him to the belief that there were also pericardial adhesions. The general opinion of the meeting was that the murmur was aortic, as it was heard in the vessels of the neck.—The President showed a case of Exophthalmic Goitre in a man exhibiting the usual signs of tachycardia, tremors, proptosis, and enlarged thyroid.—Mr. H. L. Barnard exhibited a case of a Parenchymatous Goitre in a young girl. He said that if the stridor increased thyroidectomy of one lobe and the isthmus would be advisable.—Dr. W. J. M. Ettles showed a case of a Tumour in the roof of the neck on the right side and congestion of the skin and mucous membranes of the head and neck with greatly dilated venules. There had been small petechiæ on the palate. The large veins of the head and neck had not been engorged, but both retinal veins had been. The tumour was the right lobe of the thyroid probably enlarged by an adenoma, but it did not apparently exert pressure on the trachea or great veins.—Dr. Ettles also showed a case of a Cervical Rib springing from the Transverse Process of the Seventh Vertebra on the Left Side in a man. The subclavian artery crossed it and simulated an aneurysm. It produced a fulness in the neck but did not give rise to any symptoms. A skiagram was shown with the case.—Mr. Barnard showed a similar case of a Cervical Rib on the Left Side but in a woman. In this case pains and weakness were complained of in the arm. No surgical interference was recommended.—Mr. Barnard also showed an extensive case of Actinomycosis of the Left Side of the Head and Neck which had been cured by the exhibition of 330 grains of potassium iodide a day and several applications of the x rays. The disease started at the angle of the jaw. It progressed rapidly until the dose of iodide reached 270 grains. About the same time the x rays were tried and the patient commenced to improve and was now practically cured. The cure was rather attributed to the potassium iodide than to the x rays. The ray fungus was found on many occasions.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND, NORTHERN AND MIDLAND DIVISION.—The spring meeting of this society was held on April 7th, at Scalebor Park, Burley-in-Wharfedale, the new asylum erected by the West Riding County Council exclusively for the reception of private patients.—Dr. J. R. Gilmour, the medical superintendent, who was in the chair, read a paper on the Value of Saline Injections in Certain Acute Cases of Mental Disease. His method was first to empty the rectum by an ordinary enema and then to inject 15 ounces of a 0·75 per cent. solution of common salt three or four times daily. Improvement in many cases followed, the mental symptoms quietening and the pulse-rate falling. The injection was rarely returned and no bad effects had been observed. The bladder had to be watched. The treatment was most useful in severe delirious cases where the strength was much reduced.—Dr. Eidison expressed the opinion that the improvement was similar to that occurring in the febrile cases in which restlessness and excitement abated when plenty of fluid was given. In such cases the nervous system shared largely in the benefit produced by the much needed water.—Dr. James

Middlemass related a case of General Paralysis of the Insane where the symptoms appeared a week after a fall of three or four feet from a ladder. The patient had received compensation under the Workmen's Compensation Act, but this was withdrawn after Dr. Middlemass's opinion as to the cause of the disease was given. His opinion was based upon the following facts: the accident was comparatively slight, causing no loss of consciousness or any symptom of direct brain injury; the symptoms of general paralysis appeared in a pronounced form a week after the accident; and there was a strong presumption of a syphilitic history. The patient died and post mortem no signs of traumatism existed in the brain or skull but the state of the cerebral vessels confirmed the syphilitic theory of the cause of the disease.—Dr. Gilmour related a case where general paralysis followed a blow upon the head but in this instance post mortem, besides the signs of this disease, there was evidence of fracture of the skull and of secondary meningitis.

FORFARSHIRE MEDICAL ASSOCIATION.—A meeting of this society was held in University College, Dundee, on April 8th, Dr. W. Graham Campbell, the Vice-President, being in the chair.—Professor D. MacEwan read notes of Four Abdominal Operations. The first case was one of gangrenous internal strangulated hernia. The patient, a female, aged 58 years, was admitted to the infirmary with a history of five days' vomiting and acute obstruction. The hernia was into the pericæcal pouch. The gangrenous bowel was excised and an end-to-end anastomosis was performed with Murphy's button. The patient's convalescence was uninterrupted. The second case was one of choledochotomy for gall-stones complicated with ruptured gall-bladder. The patient, who was a man, 35 years of age, had for the past ten years been subject to attacks of biliary colic. The first symptom of serious mischief was a severe attack of pain in the epigastrium accompanied by rigors and subsequently high temperature and delirium. A gall-stone was removed from the common bile duct which was then sutured. The patient's condition improved gradually without much trouble and without any fistula resulting. The third case was one of gastrectomy for cancer of the body of the stomach. The patient, who was a female, aged 43 years, was now able to take a very fair quantity of nourishment, five weeks after the operation. The fourth case was one of laparotomy for intestinal obstruction caused by an adherent appendix. The patient was a female, aged 28 years. The appendix was adherent at its tip to the mesentery and embraced a loop of small intestine; it was removed in the usual way and the abdomen was sutured. The patient recovered without trouble.—Mr. D. M. Greig and Professor J. A. C. Kynoch discussed the cases.—Dr. R. Cochrane Buist give some Statistical Notes on his hospital experience of Cœliotomy, Abdominal and Vaginal. There were in all 80 abdominal cases, with 16 deaths, and 43 vaginal, with five deaths. Of the abdominal operations 21 were upon the ovaries, with two deaths; 14 for tubal conditions, with one death; six for ectopic gestation, with one death; 14 for myoma uteri; 10 for cancer uteri; and four for displacements. 21 cœliotomies were performed for cancer, with seven deaths.

GLASGOW SOUTHERN MEDICAL SOCIETY.—A meeting of this society was held on April 14th, Mr. Thomas Richmond, the President, being in the chair.—Dr. J. A. C. Macewen showed a case of Suppurative Mastoiditis with incomplete Sinus Thrombosis upon which he had operated four and a half months before. The patient at the time of being shown to the society was in perfect health. Dr. Macewen read notes of the case from which it was seen that the patient on admission to the Elder Cottage Hospital, Govan, was in a very serious state, exhibiting as he did symptoms of pyogenic sinus thrombosis with encephalitis threatening abscess formation. Symptoms progressed rapidly during the short time that elapsed before the operation was performed, the patient being noticed to be very drowsy and difficult to rouse to answer questions for an hour or so before being operated upon. The radical mastoid operation was performed, the bone being thoroughly cleaned out by the burr; the cavity thus made having been thoroughly disinfected the dura mater covering the temporo-sphenoidal lobe was exposed. It was found to be inflamed and its vessels engorged. The membranes, however, were left intact, it being hoped that this condition might diminish with the removal of the cause. The sigmoid sinus was next exposed and it was found that though not entirely occluded in its lumen the walls of the sinus had almost completely lost their natural elasticity. Nothing further was done to the sinus. The patient made a rapid and perfect recovery. The case proved of interest to the members of the society apart from its surgical bearing, as the patient was the first upon whom a surgical operation was performed in the Elder Cottage Hospital—one of Mrs. Elder's many and noble gifts to Govan.—The case was discussed by Dr. G. H. Edington, Dr. A. Young, and the President, all of whom congratulated Dr. Macewen on the promptitude of his treatment as well as the result of it.—Dr. Macewen replied.—Dr. James Weir then read Notes on Surgical or Traumatic Rheumatism and the Use of Corrigan's Button, which were discussed by Dr. Edington, Dr. M. Dunning, Dr. J. S. McKendrick, Dr. J. C. Howie, and the President.—Dr. Weir replied.

MANCHESTER MEDICAL SOCIETY.—At a meeting of this society held on April 13th Dr. J. S. Bury, the President, gave his presidential address from the chair.—Dr. C. W. Buckley read a paper entitled "Observations on the Treatment of Neurasthenia." Objective symptoms, he said, must be the chief guide to treatment which came under five heads. 1. Relief of the nervous causes; generally it was necessary to send the patient away from home and relatives for a while and preferably to a bracing climate. 2. To search for and to treat any disorders of other systems which might be accessory causes, including errors of refraction, malformations, and disorders of the mouth, nose and naso-pharynx, dyspepsia and functional hepatic disorders, moveable kidney and enteroptosis, malformations and disorders of the generative organs, &c. These were all open to treatment but the influence of a neurotic heredity or up-bringing could rarely be removed, nor was the increased vulnerability of the nervous system resulting from prolonged or exhausting disease open to direct attack. 3. Disorders of the vaso-motor system were common and important and should be treated by such measures as hydrotherapy, massage, and physical methods of other kinds, but electricity, though appealing to the patient's imagination, was rarely so useful; galvanism of the abdomen was often useful, especially if constipation was present. 4. Abundant nourishment must be supplied to the nervous system and must be carefully chosen so that it might be easily digestible and suited to the needs of the nervous structures. The Weir-Mitchell treatment covered all this ground but it must be rigidly carried out if it was to be successful. 5. Special symptoms, such as headache and sleeplessness, should be treated as they arose. Drugs he considered to be of little value.—The following specimens were shown:—1. Mr. A. Wilson: Professor Vernon-Harcourt's new Chloroform Inhaler. 2. Mr. A. H. Burgess: (*a*) Sterilised Dressings in Portable Form; and (*b*) Aseptic Caps for Surgeons' use during operations. 3. Dr. R. B. Wild (in the Materia Medica Museum): Specimens of Drugs and Minerals.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 8th, Dr. R. E. Schelefield, the President, being in the chair.—Dr. A. E. Wright opened a discussion on the Treatment of Disease by Animal Extracts and Serums, with Special Reference to Practical Application. The diphtheria antitoxic serum was, he said, the only one that could be standardised; as to the others they might contain the poisons instead of the antidote. He quoted (1) very successful results from the use of antistaphylococcic serum in cases of boils, acne, sycosis, and paronychia; and (2) cases of lupus, tuberculous glands, tuberculous cystitis, and peritonitis benefited by the use of tuberculin. The principle of administration was to allow a sufficient time to elapse between the injections to promote the formation of protective substance. Koch's original method gave no time for the patient to respond.—The President gave his experience of 70 cases of lupus at the skin hospital at Prague which he saw when Koch's tuberculin was first used. Great improvement in nearly all the cases was the result.—Dr. F. S. Toogood said that his experience with regard to antitetanic serum in the last ten years was that in acute cases all the patients died, with the exception of one in whom he excised the injured part at an early stage. Chronic cases recovered without the serum which got the credit when it was used in these cases.—Mr. J. Prior Purvis instanced cases of hæmoptysis and hæmatemesis much benefited by adrenalin.—Dr. Wright, in reply, said that joint pains were not uncommon after antidiphtheria injections.

The urticaria which often followed these injections was much benefited by the use of calcium chloride. The difficulty of treating tetanus was that the antidote found the poison already intimately united with the structure of the nervous system. Early cutting out the wound was the best treatment. Intracerebral injections were of no use after spasms had occurred.

LARYNGOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on April 8th, Dr. P. McBride, the President, being in the chair.—Dr. StClair Thomson showed a case of Membranous Ulceration of the Fauces of six weeks' duration in a female, aged 36 years.—Those members who discussed the case inclined to a diagnosis of syphilis.—Mr. P. R. W. de Santi showed a case of Chronic Hoarseness in a woman, aged 43 years. There was general thickening of the inter-arytænoid space and of the larynx and there was a small nodule at the right processus vocalis with a corresponding depression on the other side (pachydermia laryngis).—Dr. H. L. Lack showed a man suffering from Bilateral Abductor Paralysis the result of trauma.—Mr. H. F. Tod showed three cases where the "Fenster-resection" operation for deviation of the septum had been performed. The results were satisfactory.—Some of those who spoke were of opinion that this operation was no new one but had been performed frequently in England for the last 15 years.—Dr. J. B. Ball showed a case of Melanotic Sarcoma of the Soft Palate in a man, aged 53 years, who noticed some black patches in his palate about two years ago. Some seven or eight months ago a growth commenced on the soft palate, which had increased considerably during the last few weeks and the patient had lost a stone in weight during the last year.—Dr. E. B. Waggett showed a Pair of Shears for doing the Operation of Thyrotomy and an Aseptic Forehead-mirror Handle for use during operations on the throat and nose.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—A meeting of this society was held at Hanover-square on March 24th, Dr. J. H. Stowers, the President, being in the chair.—The President announced that Dr. H. A. G. Brooke of Manchester had consented to deliver the oration at the annual meeting next month on the Clinical Relationships of Seborrhœa and that the society's dinner would take place at the conclusion of the meeting.—The following cases were exhibited: Dr. A. Eddowes: A case of Extensive Squamous Eczema.—Dr. E. G. Graham Little: (1) A case of Purpura Hæmorrhagica, and (2) a case of Prurigo of Hebra.—Dr. V. H. Rutherford: (1) A case of Lichen Planus, and (2) a case of Lichen Obtusus (?).—Mr. A. Shillitoe: (1) A Syphilitic Eruption of the Corymbose type, and (2) a case of Syphilis and Scabies.—Mr. Waren Tay showed a Case for Diagnosis: a boy, aged 17 years, with small pigmented depressions on the bridge of the nose. Among the theories put forward were (1) that the condition was congenital, (2) that it was of the nature of acne keloid, (3) early stage of rodent ulcer, and (4) a chronically affected sebaceous cyst.

SOUTH-WEST LONDON MEDICAL SOCIETY.—A clinical meeting of this society was held at Bolingbroke Hospital on April 13th, Mr. E. F. White, the President, being in the chair.—Dr. E. A. Peters showed (1) cases in which Artificial Ear-drums gave Marked Improvement in Hearing; (2) a case of Abductor Paralysis with Adductor spasm for which tracheotomy had been performed; and (3) Tertiary Nose Deformity treated by Paraffin Injections.—Mr. H. B. A. Pearson showed (1) a case of Hydrocele of the Testis simulating hernia; and (2) a case in which a Spur was growing from the nasal septum.—The President read notes of a case of Chromidrosis and notes of a case of Parotid Calculus.—Mr. H. Stanley Turner described an operation for Abscess of the Temporo-sphenoidal Lobe. The patient recovered.—Mr. Macleod Yearsley read (1) notes on a case of Successful Operation for Cerebral Abscess; and (2) notes on the Ear in Relation to Insurance.—Surgeon-Major Mark Robinson read notes on a case of Aortic Aneurysm.—A special Inhaler for administering Chloride of Ethyl, manufactured by Messrs. Duncan, Flockhart, and Co., was shown.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 13th, Mr. J. Paul Bush being in the chair.—Dr. E. H. E. Stack showed some specimens of rare Tumours of the Breast with Microscopic Sections.—Dr. R. Shingleton Smith, Mr. H. F. Mole, and Dr. E. W. H. Groves remarked on the specimens.—Mr. Bush read notes on a case of Acute Hæmorrhagic Pancreatitis.—Mr. Mole, Mr. T. M. Carter, Dr. H. Waldo, and Mr. J. L. Erith discussed the case.—Dr. E. C. Williams read notes of a case of Blackwater Fever.—Mr. Carter and Dr. Waldo spoke on the case.—Mr. G. Munro Smith read a paper on the Diagnosis of Malignant Tumours by the Microscope, illustrated by lantern slides.—Dr. J. Michell Clarke, Dr. Stack, and Dr. W. K. Wills discussed the paper.

THE MORTALITY STATISTICS OF MEASLES: A CORRECTION.—In the report of the last meeting of the Society of Medical Officers of Health Dr. M. K. Robinson, medical officer of health of Dover, was represented as saying that the fatal cases of measles in his district had averaged 180 in the seven years prior to notification and 81 in the seven following whereas the numbers, which should have been 181 and 81, were those of the *total deaths* in the respective periods.

Reviews and Notices of Books.

A Text-book of Legal Medicine and Toxicology. Edited by FREDERICK PETERSON, M.D., President of the New York State Commission in Lunacy, Chief of Clinic, Department for Nervous Diseases, Columbia University; and WALTER S. HAINES, M.D., Professor of Chemistry, Pharmacy, and Toxicology in Rush Medical College, Chicago, Professorial Lecturer on Toxicology in the University of Chicago. In two volumes. London and Philadelphia: W. B. Saunders and Co. 1903. Vol. I. Pp. 730. Price 21*s.*

THIS text-book is arranged on the plan now so frequently adopted of obtaining the assistance of several writers each of whom contributes an article on a special subject. This method has the advantage of gaining expressions of opinion from many sources but for the purpose of uniformity and the prevention of overlapping a capable editor is absolutely essential. In the work now under consideration this duty has been undertaken by two competent physicians and the result is a good text-book and work of reference. An endeavour has been made to give to the medical and legal professions a fairly comprehensive survey of forensic medicine and toxicology in moderate compass. The first volume deals with certain aspects of medical jurisprudence; the subject of poisons will be considered in the second volume.

The chapter on the technique of medico-legal post-mortem examination (by Dr. Ludvig Hektoen) contains a detailed description of the method of making necropsies in cases in which a legal inquiry has been ordered. Due stress is laid on the necessity of a thorough and exhaustive examination. Accurate observations, completeness, and correct conclusions are only obtainable when the necropsy is conducted according to a definite or systematic plan, by means of which regions and organs are successively examined without disturbing the relations and appearances of those being, or yet to be, examined. Dr. Hektoen has succeeded in giving instructions which are not only easy to follow but if acted on will prevent the medical witness from omitting certain details which are not usually noted when making a post-mortem examination simply to determine the cause of death. In certain notable trials for murder the neglect of such care has almost led to the collapse of the prosecution.

The articles on identity, signs of death, and death from asphyxia, wounds, and gunshot wounds are all excellent and the manner in which they are written renders them easy of perusal and readily accessible for purposes of reference.

The remarks on railway injuries (by Dr. J. Chalmers Da Costa) and those on injuries and disorders of the nervous system following railway and allied accidents (by Dr. Pearce Bailey) are also worthy of note. The medical

witness is frequently placed in a most difficult position when called upon to give evidence when certain symptoms have developed in an individual who has been in a railway accident. The fact that shock alone, or shock combined with slight physical bruising, may cause serious disorders of the nervous system explains the increased proportion of nervous as compared with other affections resulting from accidents, for in accidents of general causation many persons may escape without serious bodily harm, while comparatively few are so fortunate as altogether to evade the severe mental commotion to which such disasters so frequently lead. Unfortunately, some of the cases brought before the courts are of a suspicious character, the alleged symptoms being purposely exaggerated. In the majority, however, traumatic neurasthenia has actually developed and the task of the medical examiner will be no light one. In the first place he has to assure himself that no fraud is being attempted and then he has to convince the court and the jury that functional disorders may be very serious to the individual concerned. The phenomena that may present themselves are well described by Dr. Bailey and a study of his remarks would be of great value to a medical practitioner when preparing his evidence in a case of this nature.

The articles on the medical jurisprudence of life and accident assurance by Dr. J. T. Armstrong will both repay perusal. The medical examiners attached to life assurance offices have frequently very difficult problems presented to them. Dr. Armstrong comments on many points which are likely to arise and, in addition, quotes a large number of cases which have come before the courts in relation to life assurance and this makes his observations very useful not only to the physician but also to the lawyer.

Another contribution to which we may draw attention is that on the Stigmata of Degeneration by Dr. Frederick Peterson. The question of degeneracy in its medico legal relations has come into considerable prominence in recent years owing to the researches of numerous investigators in the rich fields afforded by the asylum, the reformatory, and the prison. Dr. Peterson rightly considered the subject of sufficient importance to accord it a special chapter in this book. An excellent account is given of anatomical, physiological, and psychical stigmata, thus affording a valuable monograph on difficult and but little studied phenomena. The text-book promises to be one of the best in the English language and we look forward with interest to the publication of the second volume.

Blood Immunity and Blood Relationship: a Demonstration of Certain Blood Relationships amongst Animals by means of the Precipitin Test for Blood. By GEORGE H. F. NUTTALL, M.A., M.D., Ph.D., University Lecturer in Bacteriology and Preventive Medicine, Cambridge; including original researches by G. S. GRAHAM SMITH, M.A., M.B., D.P.H. Cantab., and T. S. P. STRANGEWAYS, M.A., M.R.C.S. London: C. J. Clay and Sons; Cambridge: University Press. 1904. Pp. xii.-444, royal 8vo. Price 15*s.* net.

Dr. G. H. F. Nuttall has performed a signal service to English readers by summarising and augmenting our knowledge on blood immunity and blood relationship in a volume characterised throughout by lucid and judicial treatment of a very complex subject in its practical relations to legal medicine, zoology, and physiology.

During the past five years new methods have yielded information on the chemistry of the blood hitherto impossible of attainment. Methods of investigation originally devised by Bordet and Ehrlich solely because of the theoretical bearing which they promised to have upon some disputed points in the study of immunity have ultimately developed so as to become of eminent practical value to the zoologist, the physiologist, and the medico-legal expert. Bacteriology, and more particularly its specialised following out in relation to the problems of immunity, has, not without justification at times, been subject to much adverse criticism through some of its devotees advancing as facts what others, not so enthusiastic, have rightly held to be mere explanatory hypotheses. But in the particular development of immunity which forms the subject of Dr. Nuttall's treatise medical men have turned the tables on the biologist, the physicist, and the chemist, the results of whose more exact methods have been called in—occasionally rather empirically—to bolster up this or that hypothesis of immunity. The methods so ably expounded, practised, and perfected by Dr. Nuttall have in the hands of purely medical men yielded exact information and assistance of a kind which the physicist, the chemist, and the biologist have been unable to afford to the efforts directed to solve some of the problems inseparably bound up with those albuminous bodies which lie at the basis of life. These methods have demonstrated differences in the albumins which were hitherto unsuspected and incapable of being made evident by the best methods at the disposal of the chemist and the physicist.

The book opens with a clear and succinct account of facts relating to antibodies in general other than the "precipitins." In this *résumé* the facts are naturally regarded in the light of Ehrlich's side-chain theory but the author does not digress into hypothetical discussions. As is well known, Ehrlich, like Metchnikoff and Bouchard before him, seeks to explain the phenomena of immunity as manifestations of modified processes of assimilation. Ehrlich regards his explanation as a purely chemical one in which the antibodies are formed because the cell endeavours to assimilate bodies which it cannot distinguish from true foodstuffs. The cell is compared to a benzene nucleus and, like the latter, is assumed to enter into chemical relations by means of "side-chains." This view has found apparent support in the production of antibodies to the albumins which are foodstuffs per os. This is undoubtedly a most ingenious conception but a moment's reflection leads us to doubt if the antibodies are formed solely because the bodies leading to their production are, or simulate, foodstuffs, for the whole series of the carbohydrates which are foodstuffs of equal importance with the albumins, and may therefore legitimately be supposed to unite with side-chains, are incapable of leading to the production of antibodies. Ehrlich's views would be capable of much more ready acceptance if antibodies existed to the carbohydrates. Since they do not do so we are inclined to ask what is the rôle played by the chemical constitutions of the series of substances which lead to the production of antibodies directed against themselves.

We have only one criticism to offer concerning Dr. Nuttall's book and it is in regard to the chapter in explanation of immunity in general. Our criticism is that if the literary and polemical contributions to the discussion of Ehrlich's side-chain theory by Baumgarten, Gruber, Emmerich, and Loew were worthy of mention surely the serious and valuable experimental investigations of Bordet, Buchner, Arrhenius and Madsen, Muir, and many of the pupils of Metchnikoff and Behring were also worthy of mention. For it is perhaps not without significance that among the large following of Ehrlich the names of those whose authority as investigators and pioneers in the fields of immunity is as great as his are not to be found. No doubt Dr. Nuttall wished to avoid too lengthy a discussion. We cannot, however, but regret that he has not taken up a task which he is eminently fitted to perform in an impartial manner.

There is no subject in medical literature so burdened as is immunity with laboratory jargon which means anything or nothing according as the reader is an adherent or an opponent of some particular explanatory hypothesis. Throughout Dr. Nuttall carefully distinguishes facts from explanations and with considerable tact limits his use of technical

phrases to terms aptly expressive of what is meant; this of itself is a most valuable feature in such a volume.

It is now known that antibodies are produced for various immunising substances other than the toxins and their allies. In the careful following out of the consequences of immunising with different albuminous bodies it has been ascertained, to put it generally, that each albuminous body—there are, of course, limitations—may lead to the production of an antibody directed against itself. Extensive study has shown that the specificity of these reactions is so rigid that the albuminous constituents of the flesh and blood of one species of animal can by their agency be distinguished from those of another. If the serum or flesh-albumins of one animal be used to immunise another of alien species, the serum of the latter acquires a "precipitin" or precipitating substance, by virtue of which a "precipitum" falls out when the immune serum is brought into contact with the serum used to produce the immunity. The reaction is one obvious to the naked eye and requires no subsequent following out in animal experiment as in the case of toxin and antitoxin, which react with one another in the test-tube without visible accompaniment. This is the broad principle. In its actual carrying out there are many pitfalls which Dr. Nuttall is careful to point out and to show how to avoid. The book is essentially an exposition of the practical bearings of the above facts and of the methods suited to the satisfactory application of the precipitin test in medico-legal, zoological, and physiological investigations. As such it is both successful and interesting.

From the great mass of experiments recorded by Dr. Nuttall and by Mr. Strangeways and Dr. Graham-Smith, who have worked at his instigation at the zoological application of the method, it is with truth stated that "the results speak for themselves and show beyond question that much may be accomplished by the use of the precipitin tests in the study of blood relationships," a study which it has hitherto only been possible to take up from the purely morphological aspect. The zoological application of the "precipitin tests" is based upon the fact that there are gradations in the degree of the specificity of the reactions. This tends to become less marked the more nearly the species of animal are related to one another so that positive reactions are obtained with the serum of animals nearly allied to each other. The "precipitin reactions" are also of sufficient delicacy and constancy to find what is probably their chief practical importance in their application to medico-legal investigations. Their medico-legal value has survived scrutiny in a way which indicates very strongly how potent may be their influence in condemning a murderer to the gallows or in removing suspicion from the innocent. The chapter devoted to the results of the applications which have up to now been made in criminal cases reads like a veritable romance. The test has proved itself useful for the identification of blood, blood stains, meats, bones, and the detection of adulteration of meat and food generally by demonstrating the presence of albuminous bodies which should be absent. It is truly a matter of great moment that a prisoner who may claim that a blood stain has been caused by bullock's or rabbit's blood can have his claim substantiated by a scientific proof of his veracity, and, on occasion, the demonstration that a stain has been produced by human blood may be of equal moment. In this connexion the "precipitin test" must prove a most valuable adjunct to the procedures upon which confidence has hitherto of necessity been placed.

The author points out that this test has already been officially recognised in Germany, Austria, Roumania, and Egypt for medico-legal purposes. In Germany those scientific institutes where the test may be performed in a satisfactory manner are stated in the regulations pertaining to it. Dr. Nuttall is at great pains to point out the difficulties which attach to its proper carrying out and to the necessity for experience in passing a judgment on the results. We fully agree with Dr. Nuttall and while recognising the claims which he puts forward for the "precipitin test" we are most emphatically of the opinion that its carrying out for medico legal purposes cannot be lightly intrusted to any dabbler in immunity but only to the very few who by experience are aware of the many pitfalls that are almost certain to obscure the issue in less experienced hands.

From the public importance of the "precipitin test" we commend the book in the first instance to the serious consideration of those engaged in medico-legal practice and also to biologists and all medical men as an eminently successful exposition of a very difficult, but very valuable and painstaking, research into the practical and public value of an outcome of the study of immunity. The book is accompanied by an excellent index and by valuable cross references throughout. Finally, we congratulate Dr. Nuttall on the most comprehensive treatise which has appeared on the "precipitins" in English or in any other language.

Diseases of the Eye. By L. WEBSTER FOX, A.M., M.D., Professor of Ophthalmology in the Medico-Chirurgical College of Philadelphia, Pennsylvania. With five Coloured Plates and 296 Illustrations in the text. London: Sidney Appleton. 1904. 8vo, pp. 584. Price 18*s* net.

THE demand for treatises and text-books on the eye must be very great. Is it, as we may piously hope, that there is a genuine desire on the part of students to make themselves acquainted with the pathology and treatment of the diseases of this little organ where so much is patent that in other regions is concealed from view? Is it that its study attracts the anatomist, the physiologist, the pathologist, the surgeon, the physician, and even the mathematician? Or is it due—we blush to ask the question—to the inclusion of ophthalmology in examinations in many different branches of medicine, to the establishment of professorships in universities, and to the great increase in the number of hospitals? Time was, when with Middlemore, or Lawrence, or Mackenzie, the young practitioner could boldly diagnose and treat any case of disease of the eye that might present itself to him. Now, with books around him that lie thick as the leaves in Vallombrosa he must spend many months in mastering the rudiments of ophthalmology; and after all, knowing how rapid is the development of this branch of medicine, when an ophthalmoscopic or refraction case does present itself in his practice, if the patient is one whom he is unwilling to run the risk of losing by an error in diagnosis, he probably thinks it expedient to send him with a note to the specialist in the nearest town.

The author states in the preface that the work is based on an extended experience and that the ordinary and well-known facts of ophthalmology are supplemented by his own views of pathology and methods of treatment. A careful perusal of the treatise leads us to endorse both of these statements. Dr. Fox is evidently familiar with the diseases of the eye, has formed his own opinions, and does not fear to express them. The subjects of refraction and of the motor disturbances of the eye to which American surgeons have paid so much attention are relegated to the end of the volume but the various diseases are discussed in topographical order, commencing with the eyelids and proceeding through the conjunctiva, cornea, sclera, and other tissues to the retina, optic nerve, and orbit. Good cases with drawings show the excellent results obtained from the employment of the x rays in the treatment of infectious ulceration of the eyelids and also in cases of epithelioma and rodent ulcer and in sarcoma of the orbit. It is evident that this mode of treatment of serious forms of disease is gaining ground and

unexpected results may be obtained hereafter in cases at present regarded as hopeless.

The treatment of ptosis seems to have attracted the attention of many surgeons and much ingenuity has been expended in devising operations for its relief. Thus Dr. Fox has noted, and briefly described, those of Birnbacher, Everbusch, Ferguson, Gillet, de Grandmont, Gruening, Motais, Mules, Pagenstecher, Panas, Allport, Tansley, Wilder, Wolf, Jessop, Hess, and Komoto, and finally gives his own which consists in drawing down the affected lid until its edge is directly opposite to that of the lower lid and the extent of the redundant fold of skin is ascertained; an incision is then made across the full width of the lid a few lines above its ciliary margin and parallel with it. A second incision is made parallel to this and at a sufficient distance from it to inclose the excess of tissue between them. The flap is then dissected off by scissors and the skin above the upper incision is freed from its underlying attachments. The margins of the wound are approximated and united by interrupted sutures near the free margin of the lid. No scar is said to follow and ectropion is avoided by the undermining of the skin of the lid before suturing it to the ciliary margin. Dr. Fox states that the ultimate results are good and permanent. Nearly as many methods for entropion and ectropion are described.

The author rightly states that in the whole range of ophthalmic surgery nothing gives more trouble and annoyance to the surgeon and more discomfort to the patient than the various forms of obstructed duct. He has himself devised a good form of gold cannula which is adapted for permanent wear. He prefers the use of large-sized probes after the canaliculus has been divided and their retention for the comparatively short period of 15 or 20 minutes. Speaking of onyx, Dr. Fox mentions a remedy, we believe not generally known in this country—cassaripe—which is the inspissated juice of the cassava, which, we presume, is the Jatropha manihot. It is said to be highly antiseptic and at the same time free from irritating qualities. It may be freely rubbed into the conjunctival folds two or more times daily. It is serviceable not only in onyx but in corneal ulcers and infectious inflammations such as purulent ophthalmia. Dr. Fox has an instructive chapter on the best mode of dealing with cases of conical cornea. American patients decline operative procedures such as the application of the actual cautery and the formation of an artificial pupil, but he has obtained good results by placing before the eye black discs with openings of various form (of which illustrations are given) and the use of appropriate glasses to correct errors of refraction.

In the account of the operation for the extraction of cataract the question of the performance of an iridectomy is left open. The author states (which is not, we believe, in accordance with custom in this country) that the pupil should always be dilated one hour before the operation is performed. Great pains are taken to remove all particles of the cortex, the eye is washed with sterile boric acid solution, and if iridectomy has not been performed the pupil is contracted after extraction of the lens with one drop of eserine. Sufficient stress is not laid on the danger attending operations for secondary cataract. Many eyes have been lost by this proceeding. The author airily speaks of incising the cornea with a broad needle and entering the capsule in the vertical direction. De Wecker's scissors are then to be introduced through the corneal opening and the blades separated, one blade passing behind the capsule, and the other horizontally in front. "With one snip the capsule is cut in two." This is all very well but what is to be done when the capsule is tough and the cut made by the scissors does not gape? or if in penetrating the capsule the iris gives signs of being dangerously dragged upon. Dr. Fox has met with no less than five cases of black cataract. He gives an interesting account of the mode of utilising the Roentgen rays in detecting and localising foreign bodies in the eye and describes a very simple and apparently very efficacious instrument which acts as a localiser. In the skiagram showing a bullet located in the skull below and behind the orbit owing to some imperfection in the printing the bullet in our copy appears to be of the size of a six-pound cannon ball.

As a rule the illustrations are sufficiently characteristic of the diseases which they are intended to represent. Exception must, however, be made in the drawing representing Hutchinson's teeth. Corneal opacities, again, are not very favourable subjects for illustration, especially when the cornea is represented by a black circle. The appearances presented are here materially modified by the impression in printing. Again, we doubt whether the illustration on p. 183 would be recognised even by an expert as representing coloboma of the iris. On the other hand, there is a good and original diagram showing the nerve centres that are in relation with the movements of the pupils.

There is a glossary which requires revision. Thus, "abatio retinæ" should be "ablatio retinæ"; "illaquestion" should read "illaqueation"; "ireankistron" should read "iridankistron"; "ceratitis," "ceratocele," and "ceratome" are all better spelled with an initial k, all being derived from *κέρας*, horn. Should not "pacheablephara" be "pachyblepharon"? In what treatise on the eye that the student or the practitioner is likely to read would he meet with such terms as "marmarygæ," "pladarotes," and "rhytidosis"? The space given to these antiquated terms might have been better occupied by such words as "hemianopsia," "dyslexia," "polycoria," and many others that are in common use. These are, however, but minor blemishes in what is otherwise a well-arranged treatise enriched by many original observations, containing a clear but comprehensive account of the present state of ophthalmology, and in all respects worthy of careful study.

The Medical Annual: a Year-book of Treatment and Practitioner's Index. Bristol: John Wright and Co. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1904. Pp. 852. Price 7*s.* 6*d.* net. Stereoscope 2*s.*

WE have pleasure in welcoming this, the twenty-second, issue of the "Medical Annual." In these days when so much work is being done by members of our profession it is difficult for practitioners to keep themselves abreast with the most recent views of medical subjects without the aid of such works as the one under review. The various departments of medicine are reviewed as in former editions. There is such a wealth of material in the volume that we can only comment on a few of the subjects discussed. In the summary on therapeusis attention is properly directed to helmitol as being a more powerful urinary antiseptic than urotropin; a case of bacteriuria is cited that had resisted treatment for years but was finally cured by this drug in three weeks. The most recent facts on serum therapy are well summarised, whilst with regard to the therapeutic action of the x rays in lupus, rodent ulcer, and epithelioma the reader will find a good account of this agent up to date. The same applies to the article on radium. With regard to the infectious fevers, some doubt appears to exist as to the efficacy of adrenalin chloride in intestinal hæmorrhage in enteric fever, the good results that have been obtained by some observers not having resulted invariably. The same remark applies to the treatment of small-pox as regards the keeping of a patient in red light. In the section on pulmonary affections we find that the pathology of asthma receives satisfactory attention. The questions in connexion with pleuritic effusion are considered, whilst the difference of

opinion as regards the relationship between human and bovine tuberculosis shows that the matter is not yet definitely settled one way or another. With regard to nervous diseases, some advance has been made in the treatment of epileptic patients, more especially as to their dietetic treatment. The diagnostic results of lumbar puncture are seen to be of considerable value and attention is drawn to the value of Lott's hyoscine treatment of the morphia habit.

As regards the treatment of tetanus by antitetanic serum, where the latter is not available Baccelli's method of injection of 2 or 3 per cent. of carbolic acid is to be borne in mind, as good results have been recorded by the Italian physicians. The number of analgesic drugs is shown still to be increasing and in connexion with them we see mentioned the immediate relief of pain claimed by Cordier of Lyons by means of the subcutaneous injection of atmospheric air in sciatica. Out of 25 cases Cordier claims to have cured 23, injections being given once a week for four or five weeks. Other methods of treating this troublesome affection are cited. In the domain of tropical diseases a great advance in the pathology of sleeping sickness has been made owing to the discovery of the relation of trypanosomata to the disease. In connexion with plague we have learnt the heroic dose of carbolic acid that can be tolerated by the human subject. The reader will also find much interesting matter relating to beri-beri, craw-craw, lathyrism, leprosy, malaria, and yellow fever.

The subject of gout has received much attention and here Dr. F. S. Toogood's paper is worthy of consideration. The bacteriology of arthritis and rheumatism would appear not to have been advanced appreciably during the last 12 months. With respect to diseases of the kidneys, a novel departure in the treatment of these affections is seen in the surgical interference recommended both for acute and chronic Bright's disease. In the former it is apparently advocated only when one kidney is affected. In diabetes the relationship of the pancreas to this disease has had further light thrown upon it, whilst non-diabetic glycosuria has been more clearly elucidated. We have no further space in which to notice the good work that has been done in children's diseases, affections of the eye, the nose, and the throat, and other departments of medicine, but mention in conclusion must be made of a new feature in the "Medical Annual" of this year—viz., the provision of a stereoscope for viewing the admirable plates contained in it. This constitutes one of its most valuable features.

Clinical Examination of the Urine and Urinary Diagnosis. By J. BERGEN OGDEN, M.D., late Instructor in Chemistry, Harvard University Medical School; Assistant in Clinical Pathology, Boston City Hospital. Illustrated. Second edition. Thoroughly revised. London, Philadelphia, and New York: W. B. Saunders and Co. 1903. Pp. 418. Price 12*s.* 6*d.*

THE object of this work is to present in as concise a manner as possible the chemistry of the urine and its relationship to physiological processes; the most approved methods of examining the urine for clinical purposes; and the diagnosis of diseases and disturbances of the kidneys and the urinary passages. That Dr. Ogden has succeeded in his endeavours is shown by the fact that a second edition has been found necessary. The first part of the volume describes the constituents of the urine, normal and abnormal, and the processes adopted in chemical and microscopical examinations. In the present edition important changes and additions have been made in the chapters devoted to those subjects in order to make the text complete. The most modern methods for determining urea, uric acid, and the "total nitrogen" have been included. Some remarks have been introduced on the presence of β-oxybutyric acid in the urine and its clinical significance. This substance is met with in large amounts in the urine of patients suffering from the severe forms of diabetes mellitus and in small amounts in scurvy, scarlet fever, and measles. Its occurrence in diabetes would seem to be of serious import as it is probably the cause of the acid intoxication which usually precedes and accompanies diabetic coma. Its isolation is rather difficult. The determination of the freezing point of urine (urinary cryoscopy) which was first studied and used by Bouchard in 1870 and which has received considerable attention from various observers during the past two years is briefly alluded to. The process is a complicated one. The ratio of the freezing point of the urine to the percentage of sodium chloride sometimes furnishes information of some value in the diagnosis of heart disease and chronic nephritis. As Dr. Ogden points out, however, the subject requires further investigation before much practical value can be ascribed to it.

Only minor changes have been made in Part II. which deals with the various morbid conditions which may affect the kidney.

LIBRARY TABLE.

New Poems. By RONALD CAMPBELL MACFIE. London: John Lane. Pp. 134. Price 5*s.* net.—Mr. Macfie is a true poet—that is to say, he has the faculty of what Ruskin called "imagination penetrative." He sings about what for want of a better name we vaguely call natural forces and we cannot call to mind any poet since the days of Lucretius who has done so. Erasmus Darwin, of course, wrote "scientific poetry," but it was neither poetical nor scientific any more than was The Loves of the Triangles, by which Darwin's effusion is now mainly remembered. Mr. Macfie, however, is impressed—as who is not?—by the enormous advances recently made in our knowledge of the nature of atoms and the hypothetical ether and writes very finely in such a passage as this:—

> "Beyond the blue, beyond the red
> The waves of ether fast and slow,
> Against our eyelids vainly beat
> Vainly atween our eyelids flow;
> And yet to the clairvoyant dead
> What various colours they may show!
>
> * * * * * *
>
> Beyond the billows of the air
> That brings the sounds of every day,
> Ten thousand tiny ripples dance
> Ten thousand little currents play
> Whereby the dead become aware
> What words the silent roses say,
>
> And learn the secrets of a star,
> And catch the breathing of the spring
> And hear above the scythe of death
> The disembodied spirits sing
> And God's eternal heart afar,
> Like a loud ocean thundering."

There is a striking passage also in the same vein of thought in the poem "To the Queen of England." Mr. Macfie, however, can play deftly in other keys; witness his charming little songs "A Keepsake," "Youth and Age," and "A Rosary." Altogether we think that Mr. Macfie is distinctly in the first rank among our younger singers.

Proposed Sterilisation of Certain Mental and Physical Degenerates. By R. R. RENTOUL, M.D. R.U.I. London: The Walter Scott Publishing Co., Limited. Pp. 26. Price 1*s.* net.—So far as anything explicit can be gleaned from Dr. Rentoul's book two main propositions appear to be advanced in it. One is that it is not advisable to interfere with "Nature's method—that of suicide" for "the care of lunatics," and the other that sufferers from certain diseases "should, if they wish to marry, be sterilised." As to the first of these Dr. Rentoul seems to lack the courage of his convictions, for on p. 11 he says that "no thinking person can advocate a policy of murder. These poor degenerates have a perfect right to live." The second is based upon assumptions relating to heredity which are, to say the least,

unproved. No other way of salvation is open because "in the Ten Commandments it has been finally enacted that the faults or sins of parents shall be visited upon the children" and "no science—no human effort—can get behind this." Perhaps, however, this loosely-written pamphlet may not contain the last word on the social problem.

JOURNALS AND MAGAZINES.

The Practitioner.—The April number of this journal deals with a variety of subjects. An article by Dr. R. Salusbury Trevor deals with the functions and the pathology of the pancreas—a branch of medical inquiry which becomes of increasing practical importance with the progressive explorations of the abdominal surgeon of to-day. Dr. H. Campbell Thomson reviews recent literature bearing upon cerebral and mental diseases in relation to general medicine, and Mr. H. S. Clogg bases upon 25 cases some pertinent remarks concerning carcinoma of the colon. Not everyone will agree with the details of Dr. F. R. Cooper's recommendations in a plea for aseptic midwifery. His article, however, is a "counsel of perfection," and its principles at least are unexceptionable. Dr. Mott contributes the first of his lectures on Progressive Muscular Atrophy.

Medical Electrology and Radiology.—The March and April numbers of this journal may be conveniently mentioned together, several articles being in a serial form. Dr. W. S. Hedley, the editor, in a review of the progress made during 1903 deals with the therapeutic applications of direct heat rays from a luminous source, the light of arc lamps, and light of various colours; he then discusses the conditions determining the permeability of animal tissues to the Roentgen rays, the therapeutic effects of the rays, and the measurement of their quantity and quality. Articles of which instalments appear are: Treatment of Affections of the Gastro-Intestinal Tract by Electrical Methods, by Dr. George A. Herschell; Methods of Application of High-Frequency Currents, by Mr. Clarence A. J. Wright; and Lectures to Medical Practitioners on Physics applied to Medicine, by Sir Oliver Lodge. American news and reports of the meetings of the British Electro-therapeutic Society are given as usual. In the April number there is an account of a fatal shock received in a bath from the water-pipes conveying currents which had escaped from a tramway service.

Climate.—In the April number of this journal Dr. C. F. Harford, the editor, writes on Sleeping Sickness and the Trypanosoma. Other articles deal with the Anti-malarial Measures in Ismailia, the Examinations in Tropical Medicine and Hygiene at the University of Cambridge, the Treatment of Ulcers, and various medical and dietetic hints for missionaries and explorers.

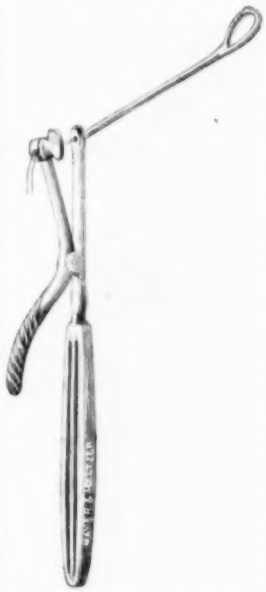
South African Medical Record.—In addition to a variety of original communications the March number contains reports of two meetings of the Cape Colony Medical Council. An editorial article is devoted to the mutual relations of hospitals and the medical profession; in the course of it there is a judiciously-worded protest "against the tendency so prevalent in South Africa to divorce hospital from general practice by putting the larger hospitals under the control of salaried men who are retained for that work alone and keeping the general practitioner from active connexion with them."

COLONIAL NURSING ASSOCIATION.—Her Royal Highness Princess Henry of Battenberg has consented to be present at the annual meeting of the Colonial Nursing Association to be held at Sunderland House, Curzon-street, by kind permission of the Duchess of Marlborough, on Wednesday, June 8th. Lord Grey will preside.

New Inventions.

POST-TURBINAL SNARE.

THIS snare has been designed to facilitate the snaring of the posterior ends of the inferior turbinals without a general anæsthetic and without the insertion of a finger into the post-nasal space. If used with a finger in the post-nasal space it is more quickly adjusted and more easily held in position than an unsupported wire loop. The wire loop runs in the rigid grooved loop, the groove being continuous with the barrel of the snare. The grooved loop is bent upwards at a slight angle to the barrel and the same instrument can be used for the right and left posterior ends manipulated by the right and left hands respectively. There is a stop in the barrel to prevent the severed posterior end dropping off the wire. The wire is readily replaced in the groove if the former be a medium or a fine one. The rigid grooved loop carrying the wire enables the posterior end of the turbinal to be felt for where this is not in view from the anterior nares and takes the place of the finger in the post-nasal space by insuring its encirclement by the wire and retention of it in position during the process of tightening the snare. The snare has been made for me by Messrs. Mayer and Meltzer, 71, Great Portland-street, London, W.



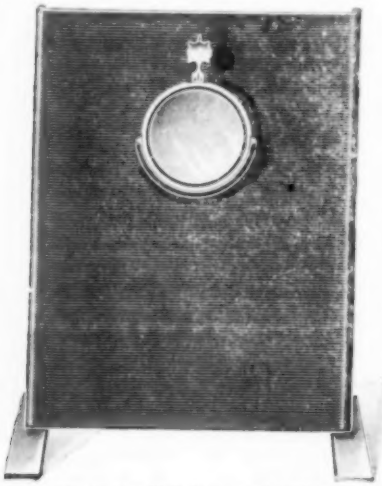
MACKAY MACDONALD, M.B., B.C. Cantab.,
Senior Clinical Assistant to the Throat Department, King's College Hospital.
Harley-street, W.

A NEW COLOUR TEST APPLIANCE.

THE following is a description of a new appliance for testing the colour vision which, I venture to suggest, will be found useful for the examination of candidates for the various public services. It consists of a dead-black metal screen 14 centimetres in height by nine centimetres in width, supported on two metal cross-bars. Just above the centre of the screen there is an oval aperture about three centimetres in diameter; around the lower half of the aperture is fixed a double groove, similar to that in a trial spectacle frame, for the purpose of carrying the coloured discs and diaphragms employed in the test. In addition to the above there are four coloured mounted glass discs, blue, red, green, and yellow respectively, one ground-glass disc, one smoke-glass disc, and three black vulcanite discs having central apertures, the diameters of which have been designed approximately to test the acuteness of the colour vision at varying distances of 100, 300, and 500 yards. There is also a card upon which appear four squares coloured to correspond with the four coloured discs.

The method of using the test is as follows. The screen is placed upon a convenient table with a light behind it, the candidate to be examined being seated upon a chair about four metres distant. In the candidate's hand is placed the card with the coloured squares. One of the coloured discs is then inserted in the groove in front of the aperture in the screen and the candidate is first asked to name the colour and next to point to it on the card. The remaining colours are similarly tested. Lastly the acuteness of the colour

vision is further inquired into by inserting the vulcanite diaphragms in front of the coloured discs. The ground-glass and smoke-glass discs are for the purpose of delineating "misty" and "foggy" atmospheric conditions.

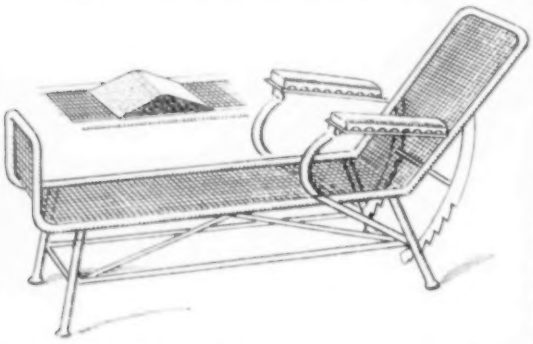


The appliance is supplied in a neat mahogany box and can be obtained from the manufacturer, Mr. F. Davidson, 140, Great Portland-street, London, W., to whom I am much indebted for the care with which he has carried out the design. The cost is very moderate.

PERCY DUNN, F.R.C.S. Eng.,
Ophthalmic Surgeon to the West London Hospital; Lecturer on Ophthalmology at the West London Post-Graduate College, Wimpole-street, W.

A NEW SANATORIUM CHAIR.

THE accompanying illustration shows a "sanatorium chair" which I have designed and modified after that as used at Belitz, Berlin. During my visit last year to some of the oldest and newest, both public and private, sanatoriums in Germany, the Black Forest, and Switzerland, the one thing I looked out for was a "chaise longue" which might be adapted to any patient. There are here at Bowdon 50 chairs in continual use; these are of cane, firmly made, strengthened by iron supports, but these are unsatisfactory from many points of view. The seats or horizontal portions of chairs are all of the same length and curve, so that tall as well as short patients find them uncomfortable and inconvenient. Mattresses are not being used here, their place



being taken by a plentiful supply of rugs. Those who have control of a sanatorium for consumptives know how costly these chairs may be, as they are being continually repaired, the seats and back supports "sag," give way, and the cane unravels; some are temporarily mended or patched with thick twine, pieces of canvas, or carpet so that they look anything but neat and clean. In the sanatoriums which I visited mattresses and pillows for the chairs were used, most had cane chairs, the exceptions being in the new sanatoriums at Davos (German), Harlaching (Munich), Belzig, and Belitz (Berlin) where iron chairs were employed. The medical directors of the various sanatoriums told me that they found the cane chairs did not give satisfaction owing to constant repairs, renewal, and short "life-history." The points aimed at in my design are neatness, simplicity, cleanliness, durability, and adaptability to suit a patient of any height. The framework is of iron, fitted with a wire mattress (the back and seat portions being in one piece); the arms are covered with leather, the back support being adjustable to any angle. I suggest that no hair or "flock" mattress should be used but that instead thick felt material similar to that as used for stage purposes by acrobats and others. Such a "mattress" would be clean, easily rolled up and carried indoors at night, and, above all, sterilisable; on top of this would be placed the wedge-shaped pillow or knee-support depicted in the illustration; this may also be of wire or cane and should be of the same (inside) width as the frame of the chair, easily slid along the mattress under the knees of the patient, and in this way making the chair adaptable to persons of any height. The chair may be had of Mr. Edgar Samuel, Port Talbot, South Wales.

Manchester Sanatorium, Bowdon, Cheshire. D. LLOYD SMITH.

A MEDICAL BAG.

I HAVE lately had made for me a bag which I think should prove useful to a large number of medical men. It is of an ordinary "kit-bag" pattern, measuring 16 × 8 × 8 inches. It contains two pockets and the usual arrangement for bottles, loops for a case of catheters, and a steriliser measuring 14 × 3½ × 2½ inches inside, which latter will thus take a pair of midwifery forceps or the necessary instruments for most operations, including silver catheters. The lid can be used as a tray during operations and supplies a receptacle never obtainable in private houses, whereas bowls and other necessaries of this description are always at hand. It has been made by Messrs. Bailey of 38, Oxford-street, London, W., who have also put up for me some packets of sterilised gauze already cut up which can be either used as swabs or dressings. Each packet contains a dozen pieces and its contents can be turned out into a bowl of lotion without any direct handling. One has ready at once with these dressings and steriliser all the means for conducting an aseptic operation in a convenient and portable form. Towels which have been boiled can almost always be produced whilst the bandages and wool can be easily kept sufficiently clean. As I have had considerable difficulty in getting what I wanted and as it seems to me of such general utility I thought it might be of some service to indicate where such equipment can be obtained. Convenient methods of sterilising midwifery forceps are seldom, if ever, forthcoming and the stock pattern sterilisers are either too small or too cumbersome, whilst already cut up and sterile dressings obviate the expenditure of a large amount of time and trouble. The bag has sufficient capacity to contain the steriliser and all the instruments and dressings most usually needed, whilst the whole outfit is just as portable as the ordinary general practitioner's bag and, in fact, also serves this purpose. ALEX. R. TWEEDIE, F.R.C.S. Eng.

Market Harborough.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this society was held on April 13th at 11, Chandos-street, Mr. Christopher Heath, the President, being in the chair. One new member was elected and the deaths of six members were reported. Two widows had become ineligible for further grants. Fresh applications for grants were read from four widows and assistance was given to three, the fourth not being eligible under the by-laws. 54 widows, 14 children, and four orphans on the Copeland Fund applied for a renewal of their grants and £1319 were voted for distribution at the next court. A legacy of £1000 from the late Mrs. Du Pasquier was announced. The following gentlemen were nominated for election at the annual general meeting to fill the vacancies in the court of directors: Mr. E. C. G. Snell, Mr. W. T. N. Bell, Dr. C. Godson, Mr. E. H. May, Dr. W. C. James, Mr. A. W. Green, and Dr. S. West. The expenses of the quarter were £57 3s. 6d. It was decided to hold the annual general meeting at 5 P.M. on Wednesday, May 18th.

THE LANCET.

LONDON: SATURDAY, APRIL 23, 1904.

The Isolation of Small-pox in Germany.

FOR many years past it has been alleged by the opponents of vaccination that the immunity from small-pox which is enjoyed by the inhabitants of the Fatherland is ascribable not to the system of compulsory vaccination and revaccination which obtains in the German Empire but rather to the hospital isolation which it is alleged is practised therein. Mr. WALTER LONG, with his customary far-sightedness and independence, determined recently to have the matter investigated by a member of his own medical staff, and consequently Dr. R. BRUCE LOW, the second assistant medical officer in the medical department, was directed to proceed to Germany in order to make the necessary investigations and to report to the President thereon. Dr. LOW visited ten of the principal towns in Germany—i.e., Berlin, Cologne, Frankfort-on-Main, Wiesbaden, Mayence, Munich, Nuremberg, Dresden, Leipsic, and Stuttgart—and at each place he made detailed inquiries as to the method of dealing with cases of small-pox and as to the isolation accommodation provided for such cases.

In the very interesting and instructive report which has just been published[1] Dr. LOW furnishes maps showing in the case of almost every town visited the precise position of the small-pox pavilion, if such it can be called, and of its relation to the surrounding buildings. The reader of the report is at once struck by the fact that in nearly every town the pavilion used for the isolation of small-pox is part of the general hospital, and further that such pavilion is in many instances not separated from the pavilion used for the isolation of cases of other infectious diseases; indeed, we are told in the letterpress that in several places no separate provision whatever is made but that when a case of small-pox occurs the patients from one of the pavilions are removed and the small-pox case or cases isolated therein. It appears, moreover, that in most instances the pavilion used for small-pox cases is supplied with food from the general kitchen and that the soiled linen of the patients is sent after disinfection to the general laundry. It is quite clear, therefore, that the immunity of Germany from small-pox is in no sense due to the arrangements for isolating cases of this disease, seeing that there is practically no special provision whatever; in fact, the Germans seem to treat the whole question of the isolation of small-pox in a manner which we in this country would be inclined to regard as very unsatisfactory and eminently casual. But this notwithstanding it appears to suffice. In Berlin, with a population of just under 2,000,000, there are 12 beds reserved for small-pox. In Cologne, with a population of 399,126, no beds are reserved. At Frankfort-on-Main a similar remark applies. At Mayence, the only town visited in which separate accommodation exists, only one case of suspected small-pox has been isolated there and the building is now used for patients convalescent from non-infectious diseases. At Munich there is a pavilion for 14 beds but during the last eight years only seven cases have been isolated therein. Nuremberg has a small-pox pavilion with 12 beds but there has been no small-pox in the town for the last 11 years. When cases of small-pox are isolated at the general hospitals no panic occurs—there is no incidence of the disease upon the surrounding population. The immediate attendants upon the sick are again revaccinated but with respect to the general staff and to the other patients reliance is placed upon the general routine vaccination and revaccination of the people. How different is all this from the conditions which obtain in this country, with its repeated instances of the excessive incidence of small-pox upon the houses in the neighbourhood of the small-pox hospitals and the costly machinery necessary to obviate such occurrences. And yet, few if any persons, conversant with the history of small-pox in London and of the influence of the small-pox hospitals, would venture to suggest that with our present very imperfect protection by primary vaccination alone London should again "isolate" its cases within its own limits.

At every place visited by Dr. LOW inquiries were made as to any spread of the disease and as to the reasons for the immunity of the surrounding population and in every case the answer was in the negative and the explanation of the immunity of the population surrounding the hospital was the protected character of the German people. It is to be hoped that the result of this report will not be to relax our own precautions as to the isolation of small-pox without at the same time insisting on a general revaccination of the population. To do this would be a fatal step. We emphasise this knowing that those who are not familiar with the history of small-pox hospitals in this country will use this report by Dr. LOW as a justification for relaxing necessary precautions. But Mr. LONG may be trusted not to give way and he may, we hope, also be trusted to introduce a Bill for general revaccination so as to put an end to the costly methods of isolation practised in this country, leaving the disused small-pox hospitals for the use of the tuberculous sick or for the reduction of some other preventable diseases. Both he and Mr. W. H. POWER, the medical officer of the Local Government Board, are to be congratulated cordially upon their initiative in this matter and Dr. LOW is to be felicitated upon his instructive report. We only wish that the Local Government Board evinced more frequently this high appreciation of its imperial duties in a public health sense. The medical department of the Board is largely concerned in advising other Government departments in matters of public health and it is surely incumbent upon the Board to keep abreast of modern methods by ascertaining precisely what is being done in other countries. The British empire has responsibilities in a moral as well as a martial sense. In matters such as these all depends upon the initiative, upon the grasp of the principle of expansion which is possessed by successive presidents.

Mr. LONG is apparently at the present juncture thinking imperially in a public health sense. He has despatched

[1] Dr. R. Bruce Low's Report to the Local Government Board on the Arrangements made in Germany for the Isolation of Small-pox Cases. Eyre and Spottiswoode, East Harding-street. 1904. Price 1s.

Dr. LOW to Germany and the report now under notice is the result, and he has also despatched Dr. THEODORE THOMSON to the West Indies with the view of ascertaining how far the methods of dealing with cholera and plague in vogue in these parts of the empire can be brought more in line with the practices of the mother country. If the Local Government Board is to advise upon these matters it is obviously desirable that some of its staff should be familiar with the several localities which from time to time are brought in question.

The Control of Measles.

NEARLY eight years have elapsed since the publication of Dr. THEODORE THOMSON'S classical report to the Local Government Board upon measles. There are still, however, very few sanitary authorities who have set about the task of dealing with the prevention of this disease in anything like a systematised manner, although Dr. THOMSON stated in his communication to the Board very definitely what in his opinion were the measures which were necessary to prevent the extension of an epidemic throughout an invaded district. The cause of this inaction was frankly admitted by several speakers at the last meeting of the Incorporated Society of Medical Officers of Health in the course of a discussion initiated by Dr. J. HOWARD JONES upon the best means of controlling outbreaks of measles, an account of which was published in THE LANCET of April 16th, p. 1058. The difficulties which beset the medical officer of health who is called upon to deal with this disease are undoubtedly in the first place its highly infective character, especially in the early stages and before definite symptoms have manifested themselves, and, secondly, the demeanour of the general public who regard the disease with indifference and even with contempt. There are other reasons to account for the non success of such preventive measures as have up to the present been adopted and chief among them, as pointed out by Dr. ARTHUR NEWSHOLME, is this, that we are deficient in a knowledge of facts relating to the behaviour of the disease. For example, we do not know with any degree of certainty how long a person may be infectious after an attack of measles, nor do we know definitely for how long the contents of rooms occupied by a person who has been suffering from measles may be capable of retaining the infective material. There are, indeed, some epidemiologists who deny that the disease may be spread by fomites at all and if they are right there must be an utter waste of public money in those districts where large sums are being spent in the disinfection of dwellings recently occupied by sufferers from measles. Now that the Education Acts are being administered by public authorities, many of whom have the advantage of including among their permanent officials a medical officer of health, questions such as those which we have indicated will no doubt be much more closely investigated than has hitherto been the case, and it is to be hoped that the education committees will give every facility to those medical officers of health or medical officers of schools who desire to study the subject. There is still another obstacle in the way of the successful suppression of epidemics of measles but it is one which ought to be capable of an easy and speedy removal. We refer to the prevention, through the instrumentality of Section 126 of the Public Health Act, 1875, or of Section 68 of the Public Health (London) Act, 1891, of infected persons being wilfully exposed in public places. These sections enact that any person who while suffering from any dangerous infectious disorder wilfully exposes himself without taking proper precautions against spreading the disorder in any street, public place, or the like, shall be liable to a penalty of £5. During the past few weeks correspondence has been taking place in THE LANCET as to the interpretation of the words "dangerous infectious disorder" in these sections. One of our correspondents in the West of England gave an account of the action taken by a medical member of the Bath town council with regard to a circular notice issued by the medical officer of health of Bath to the effect that a person is liable to a penalty who wilfully exposes himself in a public place while suffering from measles. Our correspondent stated that the medical councillor in question was evidently of opinion that Section 126 does not apply to measles, whereupon Dr. PRESTON KING, who was the medical gentleman alluded to, replied in a subsequent issue that it was not a question of opinion but of fact, and that the expression "dangerous infectious disorder" in the Act of 1875 applied only to the scheduled infectious diseases in the Infectious Disease (Notification) Act, 1889. Exception was taken to this interpretation by other correspondents and at the meeting of the Society of Medical Officers of Health already referred to the question was discussed by several speakers, some of whom insisted very strongly that Section 126 applied to any dangerous infectious disease, including measles, while others were equally emphatic in their opinion that the section referred only to those diseases scheduled under the Infectious Disease (Notification) Act, 1889. So far as we are aware there are no records of any prosecutions for wilful exposure while suffering from measles, though we believe one such successful prosecution was once undertaken by the medical officer of health of Wigan. It is very desirable that there should be a decision on this debateable question in a court of law and there should not be any difficulty in obtaining a definite pronouncement.

The Cholera and Enteric Fever Epidemics at Hamburg.

IT would seem as if Hamburg is destined to remain for many years to come the classic ground of discussion on the action of water in the spreading of such diseases as cholera and typhoid fever. This subject was brought forward again before the Epidemiological Society at its last meeting, when Dr. REINCKE, who is a corresponding member of this society and medical officer of health of the city of Hamburg, read a paper on the Epidemiology of Enteric Fever and Cholera in Hamburg, which is published at p. 1105 of our present issue. There is a curious feature about discussions in regard to Hamburg. Almost all those who enter into the details seem to come under a sort of spell. It would appear as if the mere name of Professor KOCH exercised a magic power and blinded them to a large number of important considerations which happen not to hold a prominent place in the remarkable and fruitful studies of this eminent man of science. One or

two passages in Dr. REINCKE'S paper read as if he was striving to shake himself free from this influence, but he does not succeed in doing so for long. For instance, he commences by saying that it is necessary to have "a clear picture in one's mind not only of the topography of the town but also of the topographical arrangement of the surrounding district." Nevertheless, and in spite of this very correct and emphatic pronouncement, Dr. REINCKE himself omits the most remarkable topographical feature of the picture.

The salient peculiarity that meets the eye on reaching Hamburg is the fact that a great part of Altona is built on a hard rock or cliff, while Hamburg lies below on flat soil a great portion of which has been redeemed from the bed of the river Elbe. The fact that Altona and Hamburg have not the same water-supply is always insisted upon and then the statistics of Altona and Hamburg are compared. But what is required is a more detailed study as generalisations may lead to error. Dr. REINCKE recalls the main facts in regard to the cholera epidemic of 1892 and says that at Hamburg "there were 26·42 cases per 1000 inhabitants and 13·44 deaths per 1000, whereas in Altona these numbers were 3·81 per 1000 and 2·13 per 1000 respectively." Then he quotes the spotted map where the spots marking the cases of cholera stop when they approach the demarcation line which separates the townships of Hamburg and Altona. But we are not told that it is precisely those parts of Hamburg that are built on the marsh land close to the river that suffered the most, and that it is precisely the part of Altona which is nearest to the river which is built on a rock. This rock forms a sort of river wall and is almost perpendicular in some places. It is quite natural that the spread of cholera should be checked at the foot of a cliff. Near Toulon and other places the same phenomenon has been noted. It would be very useful to make a fair comparison between Altona and Hamburg but it has not yet been done, though it does not seem to be altogether impracticable. There are at Altona, away from the river and behind the rock, some low-lying and poor districts that do compare fairly with what exists at Hamburg. If the statistics from these districts could be secured it would be found that the death-rate from cholera in that part of Altona was very much higher than 2·13 per 1000. Thus the contrast between Altona and Hamburg would not be so great as stated, and this, too, in spite of the difference of the water-supply in the two places. In any case, and as we have on more than one occasion pointed out, the contrast between Altona and Hamburg is not so great as that presented within the boundaries of Hamburg itself, where there is no difference in the water-supply. This is admirably set forth in the statistics of the Hamburg municipality. Here it is shown that in the Harvestehude district, where the average annual income is 3155 marks per head, the death-rate from cholera was 4·48 per 1000. On the other hand, in the Veddel district, where the annual average income is only 118·93 marks per head, the death-rate from cholera was equal to 27·50 per 1000. With these figures it would be as logical to say that the epidemic depended on the money-supply rather than on the water-supply but this would be only a part of the truth. Not one but many factors must be taken into account. Let us take the Hamm district where the income is not very high or very low—namely, 716·7 marks per head. It will be found that on the portion of this district which rests on dry soil the death-rate was 9·15 per 1000, while in the part which is built on marsh land the death-rate from cholera was 21·37 per 1000. Here we have a small district, all the inhabitants drinking the same water, and yet what a different result.

Though admitting that enteric fever follows much the same rules as those which govern the spread of cholera Dr. REINCKE is less affirmative in regard to the action of water. He states that this question cannot be decided statistically because the numbers involved are too small. Then when speaking of the forthcoming supply of absolutely pure water from deep wells he adds this significant warning: "What enteric fever then remains will certainly have nothing to do with the water-supply. Already now I should like to remark that several large towns of Germany supplied with deep well water have not less enteric fever than Hamburg." Further, he adds, "you will see clearly that the great epidemics of enteric fever fall in the dry years when there is a low level of ground water, whereas in very rainy years enteric fever obviously recedes." Not that Dr. REINCKE supports PETTENKOFER'S theories; on the contrary, he tries to show that it is in these dry seasons that the water-supply is most likely to be contaminated. Thus we are forced back upon the previous admission that typhoid fever is as prevalent in towns where the water-supply is above suspicion as it is in Hamburg where the water has so often been accused as the cause of all the mischief. The real fact is that contaminated water, just like contaminated milk, is a very efficient means of spreading enteric fever among persons who are predisposed. If there is no such general source of dissemination of infection then these diseases will spread more slowly. But where the population is predisposed to the disease it will find some door of entry. The only complete remedy is to remove the predisposing causes. They are of more importance than the accident that spreads the epidemic and of these predisposing causes Dr. REINCKE, in company with too many authorities on such subjects, fails to give us any information. Nevertheless, the presence of such an eminent authority among us is a great advantage. There is much to be learned from the experience acquired on the continent, and the Epidemiological Society is to be congratulated on having secured the coöperation of Dr. REINCKE.

Annotations.

"Ne quid nimis."

STATISTICS OF TUBERCULOSIS.

Dr. G. A. Heron delivered a lecture on April 14th in the school-room of St. James-the-Less in Sewardstone-road, Victoria Park, London, on the Prevention of Consumption. The lecture was given at the invitation of the Kindred Working Men's Hospital Supporting Societies and Dr. Heron had no reason to complain of the enthusiasm of his audience. Some interesting statistics were furnished to Dr. Heron by Dr. John Tatham of the General Register Office, Somerset

House. The fall in the mortality from phthisis was well shown in the following table :—

Death-rate from Phthisis in England and Wales per 1,000,000 Living (Both Sexes).

Five years, 1866-70.	Five years, 1871-75.	Five years, 1876-80.	Five years, 1881-85.	Five years, 1886-90.	Five years, 1891-95.	Five years, 1896-1900.
2448	2218	2040	1830	1635	1462	1323

In a period, therefore, of 35 years the fall in the mortality from phthisis has been from 2448 per 1,000,000 to 1323 per 1,000,000. According to Dr. Tatham the mortality from phthisis differs greatly in the two sexes. In the last five years for which statistics have been prepared—i.e., in the quinquennium 1898-1902—phthisis was fatal to 1529 out of every 1,000,000 males living but to only 1114 females in every 1,000,000 females living. Dr. Heron also communicated the following important table from Dr. Tatham :—

Annual Death-rates from Phthisis per 1,000,000 Living Persons in England and Wales.

Year.	Death-rate per 1,000,000.	Year.	Death-rate per 1,000,000.
1882	1850	1893	1466
1883	1880	1894	1383
1884	1827	1895	1396
1885	1770	1896	1303
1886	1739	1897	1336
1887	1615	1898	1311
1888	1564	1899	1330
1889	1573	1900	1333
1890	1682	1901	1284
1891	1569	1902	1233
1892	1468		

Another table furnished by Dr. Tatham dealt with the infantile mortality of tuberculosis.

Annual Rate among Infants under One Year in each 1000 Births.

Years.	Boys.	Girls.	Both sexes.
1897-1901 (average)	8	6	7

Annual Rate among Children under Five Years in each 100,000 Living at that Age.

Years.	Boys.	Girls.	Both sexes.
1897-1901 (average)	395	320	357

Dr. Heron wisely avoided entering on debatable points in connexion with the subject upon which he was lecturing and laid great stress on the fact that the power to move in the matter of securing the prevention of consumption lies in the hands of those who vote for Members of Parliament. He also urged his hearers to procure from candidates for Parliament at the next general election definite pledges to promote further legislation for public health. He particularly indicated the advisability of educating the public to a proper appreciation of the precautions necessary to prevent the spreading of consumption.

THE ASTLEY COOPER PRIZE.

As will be seen by an advertisement in the present issue of THE LANCET the next triennial prize of £300 under the will of the late Sir Astley Cooper, Bart., will be awarded to the author of the best essay or treatise on the Naked-eye and Histological Anatomy of the Spinal Cord. The competition is open to everybody except the members of the staffs of either Guy's Hospital or St. Thomas's Hospital or any one related by blood or affinity to them, but the essays must not be the production of two or more authors. They must be written in English or if in a foreign language must be accompanied by an English translation and they must be sent to Guy's Hospital on or before Jan. 1st, 1907, addressed to the Physicians and Surgeons of Guy's Hospital, London, S.E. The successful essay may be printed in the Guy's Hospital Reports but this will not preclude the author from publishing it elsewhere after obtaining permission. Further particulars as to the conditions of competition and the like may be obtained on application to Dr. G. Newton Pitt, Guy's Hospital, London, S.E.

THE MOISTURE IN TOBACCO.

THERE may be good fiscal reasons for raising the degree of moisture in tobacco from 30 to 32 per cent., as is suggested in the new Budget, but the precedent, we think, is an undesirable one and the principle of the proposal open to objection. To pay 5*s.* a pound for water in tobacco may not appear to be on all fours with paying 5*d.* a quart for water in milk, or 1*s.* 6*d.* a pound in butter, but morally there is no difference. The State allows it in the first case but not in the second and third. The old limit as regards tobacco was liberal and worked satisfactorily and on the whole there is reason for opposing a policy of State-aided attenuation. Moreover, it may be remarked that the presence of moisture in tobacco is of some importance to public health, since the combustion of tobacco containing a large proportion of moisture is impeded, while as the generation of vapour is increased so are the chances of the poisonous principle being carried into the mouth.

SAMUEL SMILES.

AT the ripe age of 92 years Dr. Samuel Smiles, whose name has been a household word in British homes for 50 years, passed away last week. Born in a comparatively humble sphere of life he succeeded by sheer hard work, and by carrying out the precepts which he laid down in his books, in raising himself to an important position in the railway world, while his literary reputation was a doubly important one, for he was both an enormously successful author and a writer of most healthy influence upon the character of the English race. At the age of 20, when the General Medical Council had not been invented and medical curriculums were less strict, Smiles became qualified to practise medicine and started practice in his native town of Haddington, but patients being few he forsook his calling and studied music and painting, supporting himself in the meanwhile by writing articles for the press. In 1837 he became the editor of the *Leeds Times*, on the strength of which appointment he married, but after his marriage, finding his salary too small for his domestic requirements, he gave up the post and became assistant secretary to the Leeds and Thirsk Railway. Later he became secretary to the South-Eastern Railway Company, a post which he left in 1866 to become secretary to the National Provident Institution. These positions brought him into contact with the men whose lives formed the text for some of his best books. One of his earliest works, "Physical Education, or the Nurture and Management of Children," no doubt owed its being to his medical studies but "Self Help," the work by which he is perhaps best known, "Thrift," and other similar books were based upon lectures and addresses which he delivered before young men's debating and mutual improvement societies. Possibly the secret of the enormous popularity of these works—and

until recently they were the most usual prize in the lower forms of every school in the kingdom—lay in the fact that the manuscripts had been used to lecture from, so that the author was able to revise them in a very practical way. He knew which were the passages that were effective and where to make his deletions, which is another way of saying that he learned the art of composition. The life of Dr. Smiles, whose doctorate was LL.D. given to him by the University of Edinburgh, well illustrated the principles of industry and integrity which he has inculcated into so many of his younger countrymen.

THE SHAKING OF THE DOOR-MAT.

THE mat at the front door is necessarily the receptacle of all kinds of filth picked up from the streets. In dry weather there is little use for the mat but in wet weather all cleanly disposed persons use it. The time comes when the mat is loaded with dirt in a more or less dried state and the simplest way of removing the burden of dirt is to submit the mat to shaking, generally on the curb-stone, or to bring it into sharp contact with a wall. This is the *modus operandi* generally adopted much to the annoyance and discomfort of the passers-by. Frequently a most offensive cloud of dust is thus raised and that this can be a source of ill-health cannot be disputed. The street door-mat must teem with potentialities for evil having regard to its purpose. The method of shaking dirty mats in the face of the pedestrian in the street is an offence against decency and hygiene and the local authorities should take steps to suppress the objectionable practice. If this clumsy method cannot be altered the mat should be taken to a place where the evil dust would affect nobody and every endeavour should be made to localise the cloud of dust. The beating of carpets is another necessary evil which, however, we do not allow in our streets, and yet most probably the dust of the more privileged door-mat would show a much more dangerous bacteriological flora than the carpet.

OVARIOTOMY AND HYSTERECTOMY IN MARTHA WARD, ST. BARTHOLOMEW'S HOSPITAL, DURING THE YEARS 1897–1903.

IN the St. Bartholomew's Hospital Reports, Vol. XXXIX., an interesting paper is published by Mr. Harrison Cripps on Ovariotomy and Hysterectomy in Martha Ward during the years 1897–1903. In these six years 182 ovariotomies have been performed, with a mortality of 2·7 per cent., and 58 hysterectomies, with a mortality of 6·8 per cent., or a total of 240 cases of ovariotomy and hysterectomy, with a death-rate amounting to 3·7 per cent. These operations are performed in a special theatre and the improved results of the last six years are attributed by Mr. Cripps to the use of the Trendelenburg position and the employment of biniodide of mercury as an antiseptic. Drainage is very seldom used and the abdomen is flushed out and drained only in those cases where there has been some escape of pus or fæcal matter into the abdominal cavity. In place of the thick silk that was at one time in use No. 2 Chinese twist is now employed and with this pure silk a ligature sinus very seldom occurs. In the performance of abdominal hysterectomy the cervix is usually left and any bleeding from the stump is checked by the use of the actual cautery at a heat of a little above that of boiling water only. Mr. Cripps likes to use both sponges and pads; the latter are made of soft woven cellular wool, are about half an inch thick, and are of a diameter varying from four inches to 14 inches. In closing the abdominal wall he uses large curved Hagedorn's needles and passes the sutures through the whole thickness of the wall including all the tissues. He has discarded the plan of sewing up the abdominal wall in layers after having given it a thorough trial. This report calls attention to the fact that St. Bartholomew's Hospital is one of the few remaining hospitals in which the physician accoucheurs are not allowed to perform abdominal operations in cases of disease of the pelvic organs. All the cases in which an abdominal section is considered necessary are seen by one of the surgeons, at the present time by Mr. Cripps, and if an operation is decided upon he performs it and takes subsequent charge of the case. We must say that we fail to see any valid reason for the continuance of this obsolete custom. We are quite prepared to admit that the question as to whether obstetric physicians should be allowed to operate at all or not is one upon which there may well be much difference of opinion. If they are to be allowed to do so then they should undoubtedly have had a proper surgical training. To allow the obstetric physicians at a hospital like St. Bartholomew's to perform operations upon the vagina and not to allow them to perform abdominal sections appears to us to be absurd. The removal, for example, of the uterus and appendages by the vagina in a case of chronic pelvic suppuration is often a much more difficult and dangerous operation than the great majority of ovariotomies and hysterectomies. To permit an obstetric physician to perform such an operation or to carry out a Cæsarean section and to forbid him to perform abdominal ovariotomies and hysterectomies is a prohibition which appears to us to be unreasonable.

THE HOLMAN TESTIMONIAL.

Dr. Holman, whose devoted service in behalf of the medical profession is to be recognised suitably, has been for the last 50 years a strenuous worker in public and private capacity. His career was largely shaped by the influences under which he fell at the beginning of his medical course. In accordance with the recognised professional education of his day he commenced his curriculum as an apprentice to Messrs. Thomas and Peter Martin, a firm of medical practitioners in Reigate. Mr. Thomas Martin aided Sir Charles Hastings in the foundation of the association which was later to be known as the British Medical Association, and Dr. Holman aided his principal. He at the same time acted as assistant secretary to Mr. Martin at the Surrey Medical Benevolent Society where, in 1848, he met Propert, the founder of Epsom College, so that while still *in statu pupillari* he became connected with the three institutions to which he has given up so much of his life. In due time Dr. Holman proceeded to Guy's Hospital, where he won prizes, served under distinguished men, and made many friends. After qualifying and a course of study at Edinburgh and Paris, he settled in Reigate in 1852 and was appointed joint secretary of the South-Eastern branch of the British Medical Association, the branch of which later he was secretary and president. Dr. Holman has done yeoman's service for the British Medical Association. He was treasurer at a critical time in the Association's history and chairman of the editorial reference committee which was appointed during the later period of Mr. Ernest Hart's editorship and which was discontinued when Dr. Dawson Williams became editor. He was also on the premises committee and has seen the acquirement by the Association of its freehold property. For these services Dr. Holman was made a vice-president for life, though the reconstitution of the Association deprived him of his seat on the Council. In 1887 he was elected treasurer to Epsom College. His services to this last institution will be apparent when we remind our readers that in 1887 the school was in debt to the amount of some £7000 and that this debt has now been wiped out, although—we mention this lest we should impede the flow of donations—there is still a mortgage on the property of £10,000. In addition to these multifarious works Dr. Holman carried on a

large practice at Reigate, founded the Reigate Cottage Hospital, started a dispensary to which every medical man in the borough belonged, and served on the town council and was the first magistrate to be sworn in on the borough bench. This is a record of good work and Epsom College particularly owes to Constantine Holman a debt which can hardly be paid. It is fitting, therefore, that the testimonial about to be raised for him, further subscriptions to which are acknowledged on p. 1172, should in some way increase the influence for good of the foundation of that institution. Dr. Holman was recently elected an honorary member of the Medical Society, a compliment that is not often paid to British medical men.

THE REGISTRATION OF NURSES.

AT a meeting of the executive council of the Association of Poor-law Unions of England and Wales on April 12th the parliamentary committee of the council, which has had under consideration the Nurses and Private Nursing Homes (Registration) Bill, reported briefly that it disapproved of the measure since it believed that its passing would have a prejudicial effect on the supply of probationers for Poor-law nursing. This opinion is noteworthy as supporting the manifesto to which we had occasion to refer in THE LANCET of April 2nd (p. 946) and might, if it stood alone, be accepted as confirming the position of those who object to State registration. At the same meeting, however, a discussion on workhouse nursing took place which may be taken to indicate the train of reasoning by means of which the above verdict was arrived at and we are fain to admit that whatever merit there may be in the conclusion the premisses are wofully lacking in appreciation of the true interests of the nursing profession. After a long debate the following propositions were adopted by large majorities:—

1. That the minimum age for commencing training should be 18 years.
2. That "qualified" nurses as distinct from fully certificated nurses should be recognised.
3. That an infirmary without a resident medical officer may yet be a training school for nurses.

Stronger evidence of the necessity for erecting some definite and suitable standard of technical education, conformity with which should alone justify the employment of the term "nurse," could hardly be tendered. But will the Bill now before the House of Commons supply that standard? There is ample ground for thinking that it will not. In so far as it admits the advisability of intrusting the registration of nurses to an independent authority rather than to any chartered corporation of nurses the Bill is a step in the right direction. Everything, however, turns upon the constitution of the central board which is to be formed, and it may be said at once that the board described in Section 4 is not of a kind to inspire confidence. In the first place, the women on the board will be at least in the proportion of 2 to 1; indeed, it would be quite consistent with the Bill to have none but female members. Now, many persons hold that women rarely display that capacity for mutual concessions which makes for a united policy. Although it is of the first importance to the efficient performance of a nurse's duties that she should be under the direction of the medical practitioner whom she is supposed to be assisting, the Bill requires that only three members out of the 21 making up the board should belong to the medical profession. The result will inevitably be the removal of medical supervision from the training and examination of nurses and the reduction of the medical man to a subordinate position in the control of the wards of hospitals and infirmaries. This consideration applies more particularly to Poor-law institutions under medical superintendents. As far as the hospitals supported by voluntary subscriptions are concerned there can be little change in this respect since in them the matron already exercises a preponderating influence and faithfully exacts her tribute of deference from staff and students. While the definition of a "nurse" given in Section 17 covers both men and women it is quite clear that nurses of the former sex will have no voice in the management of affairs and we are promised the anomaly of a council dominated by women attempting to regulate the training of a body of men whose *raison d'être* is the very fact of their undertaking work which women are not thought competent to perform. It is further to be noted that such a large employer of labour in the way of nursing as the Metropolitan Asylums Board has no direct influence in deciding upon the claims of various persons to the style and title of "nurse," and more remarkable still is the fact that no allusion is made in the Bill to the Local Government Board which is, in effect, the court of appeal in nursing matters for the large body of men and women, constituting a majority of nurses, who work under the Poor-law. Another point is perhaps worthy of attention. No provision is made to remove that ambiguity attaching to the word "person" which has so often given rise to trouble. There appears to be nothing to prevent the formation of "nursing companies" by unqualified individuals who could set the Bill, if passed, at defiance, just as has been done in the case of druggists and dentists. Altogether the Bill is unsatisfactory and since it has little prospect of passing this year it is to be hoped that drastic changes will be made in it if it is to be again introduced.

THE NAUHEIM SPRINGS.

THE paper read before the Hunterian Society on March 23rd by Dr. Paul C. Franze on the physiological action of the Nauheim springs and the indications for their use chiefly in circulatory disorders once more directs the attention of the medical profession in this country to the value of those springs in the treatment of affections of the heart and blood-vessels. The first effects produced on entering a Nauheim bath are acceleration of the pulse and contraction of the peripheral vessels of the skin and subcutaneous tissue. Congestion of the internal organs ensues; soon, however, the contraction ceases, the superficial vessels dilate, and the pulse becomes slower and stronger; "reaction" is manifest. Dr. Franze considers that the presence of the salts in solution and the carbonic acid gas intensify the stimulation of the skin and modify the action of the coldness of the water, the aggregate result being that in a Nauheim bath reaction supervenes much sooner and with a greater intensity than is possible with ordinary fresh water. Many authorities on balneology consider that the salts in solution in the various mineral waters are not absorbed by the skin to any appreciable extent. Dr. Franze, however, whilst admitting that it is improbable that any salts completely permeate the skin, believes that they are imbibed by the epidermis to a sufficient extent directly to stimulate the peripheral nerve endings and capillaries of the corium. The salts then maintain their action for some time after the conclusion of the bath. The entire nutrition of the skin is thus increased, it holds a greater amount of blood, and its excretory functions exhibit a revivification which is more than transitory. It must be acknowledged that as yet no scientific basis for balneo-therapeutics has been established but it must nevertheless be granted that special bathing and drinking "cures" are most efficacious in many chronic morbid conditions and cannot be replaced by any other modes of treatment. We venture to suggest, however, that the good results often obtained at Nauheim in patients suffering from chronic cardiac affections cannot altogether be assigned to the virtue of its waters. Patients may purchase "salts" brought from Carlsbad or other spas, dissolve them, and drink the solutions in their own homes in England

but they will not experience the same beneficial effects as from a course of treatment at one of those spas. The difference is that at the continental resort the patient is subjected to a *régime* which is highly beneficial. So it is at Nauheim. The hour of rising, the time, quality, and quantity of meals, the journey to and from the bathhouse, and particularly the amount and nature of exercise are most carefully regulated. Cases of "cardio-vascular neurosis" are especially favourable cases for treatment at Nauheim and doubtless the strict *régime* under which they are placed has much to do with their recovery. It is exceedingly difficult, if not impossible, to impose the same restrictions upon these patients in their own homes; they are therefore sent to Nauheim for a special purpose and devote all their energies to "getting well."

SPRING SLACKNESS.

THERE are certain persons to whom the advent of spring, instead of bringing that sense of rejuvenescence which was referred to in an annotation in our columns last week, provides a very different sensation. The youth of the year, when nature seems to revel in growth and development, ought to give, it might be thought, to the human species too a sense of vigour and of the natural joyfulness of fecundity. When the birds are breaking into song and the plants into flower poor man might also exult in life and its annual time of awakening growth. Yet to many the return of spring is only the return of a vague feeling of listless languor, a slack sense of fatigue that comes without labour and of weariness that is uncalled for by any unusual effort. To those who dwell in cities, at any rate, spring has trials that are peculiar to itself. To some extent these arise from the knowledge that abroad in the country all is new life, refreshened vigour, and inspiring atmosphere, while in town the wonted thraldom is enhanced by the suspicion of these things that is gained from the trees and the plants of public parks and open spaces, where poor little bits of nature bloom only to suggest in vain all that awaits the town dweller if he could escape. It is not only dissatisfaction though at being unable to partake in nature's gaiety that produces the feeling of which we speak: something is due to climatic conditions. Who does not know the enervating sense that accompanies the first warm day of the year. We may agree with Johnson that he is a weak creature who is influenced by the weather but if we do we must confess with the same breath that to-day most of us are weak creatures. If, like Johnson, we lived in more leisurely times and regaled ourselves heartily in Fleet-street about the middle of the day, following the meal with a comfortable discussion, maybe we, too, should be indifferent whether the sun shone or the rain fell. Unfortunately we work our nervous systems more and our alimentary organs less than did our grandparents. Inevitably we have a sensitiveness that was unknown to most of them. Their fits of "the spleen" were well earned, probably, by loads within the stomach. We acknowledge no such consoling cause for the ennui that often in the spring assails the town dweller. Happy he who can dispel it by a week-end in the country or at the sea before his regulation summer holiday arrives.

THE DISTRIBUTION OF PLAGUE.

THE medical officer of health of the Cape Colony reports that for the week ending March 26th the plague state of the colony was as follows. No case of plague in human beings was discovered at any place in the colony during the week in question but plague-infected rodents were found at Port Elizabeth and at East London. In the Cape Town and Harbour Board area 302 rats were examined during the week but none was affected with plague. As regards the Mauritius, a telegram from the Acting Governor received at the Colonial Office on April 15th states that for the week ending April 14th there were 2 deaths from plague. With respect to the Transvaal a telegramfrom Lord Milner, dated April 16th, states that the suspected cases up to that date numbered 158: coloured persons, 140; and whites, 18. Deaths 75: coloured persons, 68; and whites, 7.

THE PRODROMATA OF THE PSYCHOSES.

AN interesting article on the prodromata of the psychoses and their meaning is published by Dr. T. S. Clouston of Edinburgh in the *Journal of Mental Science* for April. It is a fact of psychiatric medicine not sufficiently recognised, says Dr. Clouston, "that attacks of mental disease have early symptoms that are often not mental in character and it is equally true that in neurology the fact has not attracted sufficient attention that all sorts of sensory, vaso-motor, and motor symptoms may be the mere preludes to an attack of insanity and not be of themselves the real disease." Such prodromata are important because the recognition of their true character might enable us in many cases to anticipate and possibly to ward off the mental attack. The practitioner who is called to see a woman suffering from an unusual form of headache, with anorexia, insomnia, and obscure paræsthetic sensations, often misses the real point of the case because he does not realise that such symptoms are, in this particular patient, of higher cortical origin and may mean an attack of acute mania in a week if nothing can be done to arrest their course. The occurrence of a widespread disorder of action of the highest cortical nerve centres, such as underlies an attack of acute insanity, affects almost of necessity the sensorial, vaso-motor, and nutritive functions of the brain and the body. Often the indications of oncoming disease are shown by disturbance of such functions accompanied with insomnia for some time before insanity is developed. Of the sensory disturbances headache and obscure cephalic pains and sensations (paræsthesial) easily set up by slight causes are of warning import. Indigestion, worry and anxiety, mental overfatigue, constipation, and slight alcoholic excess may be exciting causes of such disturbances and may lead to slight or severe, but usually not serious, "nerve storms." The persistence of insomnia and of melancholic depression makes the outlook a little more serious. Dr. Clouston reports a typical case of a woman, 50 years of age, who had been subject at times to headache and a "weary," painful feeling in the back of her neck and back all her life when tired, but who otherwise was strong and well-nourished. During a period of special anxiety and much exhausting nursing which she had to go through these head and spine symptoms got worse and became continuous instead of being intermittent. They unfitted her for work, mental or bodily, and she had to remain in bed all day. There was neither rise of temperature nor local tenderness. Their persistence exhausted her strength and brought on insomnia and in a few weeks she became depressed mentally. "When the melancholia came on all the bodily pain went off. In the course of three months she was acutely melancholic and had to be placed in a mental hospital for treatment. She recovered but the first symptom of the passing off of the psychosis was the recurrence of the headache and bodily pains." She has had several such attacks since, each one with the same sequence of symptoms. She has now the impending feeling of danger and dread which so many melancholiacs have before an attack. This case is a type so commonly met with, says Dr. Clouston, as to cover very nearly half the field of melancholia. In most cases the headaches have not quite the character of the ordinary "woman's headache," they are more constant and intense, more distracting and disabling, and attended with "peculiar sensations" as of weight, lightness, local burning, or "bursting." Often they

are accompanied by giddiness, creeping feelings, and sensations of heat and cold, and of soreness about the head. Dr. Clouston looks to a nutritional failure of the higher cortical nerve cells as the cause of such symptoms. Auto-intoxication, if present, aggravates the condition but is as likely to be a sequel facilitated by the lowering of the vitality of the brain and the nervous system. The mental areas or centres in the brain, says Dr. Clouston, are "like a busy city on an island, its food, its commerce, its electric wires, and every source of its life and activity being carried to it through the surrounding sea." The sensory paths, the gateways into the mind, are first disturbed and melancholia or mania, stupor or mental dissociation soon follows. "An over-sensitive constitution is commonly the basis of the melancholic diathesis." Visceral paræsthesiæ may be the starting points of delusional conceptions developed in melancholia. The facial muscles of expression are the first to fail in subtlety and beauty of coördination and before the mind gives way the eye is dull or listless or the cornea has the feverish light of oncoming mania. The brow is furrowed, fixed "lines of care" show themselves on the face, there is often an "abstracted" look, and the lively play of features characteristic of health is lost. Neurasthenia, insomnia, hysterical attacks, circulatory disturbances such as palpitation, "sinking at the heart," and attacks of flushing hot and cold, long precede the mental symptoms. We know little about blood changes because they have not been investigated in the prodromal stages and the same may be said, concludes Dr. Clouston, of the so-called auto-intoxication processes. Menstrual derangements are frequent prodromata of attacks of insanity in women, amenorrhœa being particularly common.

THE CRY OF PAIN.

No chapter in the book of natural science is more interesting than that which deals with the emotions of human beings and of animals, how they are aroused and how they are exhibited. Indeed, so far as man is concerned, it may almost be said that this study lies at the bottom of every art. To depict the emotions of his imagined beings and thus to arouse through sympathy the real emotions of those before whom they are depicted is the aim alike of the artist, the author, and the actor. Nor is there anyone amongst an audience at the theatre or amongst the readers of romance or the spectators at a picture gallery who is better able to value an artist at his real worth than the student of natural history who has looked a little into this matter of the emotions and has studied their origination and the true symptoms by which they are displayed in nature. Thus, too, it often happens that the painted picture of some human struggle or the artistic efforts of a sensational actor may appeal to the vulgar eye but through some obvious flaw in correct expression or in muscular action may fail to impress the more discerning eye of the biological student or the trained medical man. Emotion forms, even in the materialistic times of to-day, so large a portion of life, and we are all so ready to read in outward expression the emotions which move in other breasts, that the essential nature of the expression of emotion is easily lost sight of. We forget that all such expression is probably primarily a subjective affair. Emotion is given expression to not that another may be thus affected but that he who experiences the emotion may find relief in the expression to which he gives vent. It is this subjective side of the matter that our correspondent "Psychologus"[1] draws attention to in alluding to the value that the cry of pain possesses in consequence of reaching the ear of him who utters it. Nevertheless, it is not actually the hearing of the cry that is essential. The sufferer would be equally relieved if his ears were stopped and he did not hear his own cry, so long as he was conscious of performing the muscular exercises that should result in such a cry. What is required for the relief of his sufferings is violent expenditure of nerve force. Nature provides this in violent muscular action and this is performed along habitual lines. Darwin, in his "Expression of the Emotions," deals with this point and we cannot do better than refer our correspondent to p. 76 of that delightful work, although we have not succeeded in finding there or elsewhere any explanation directed pertinently to the exact point which he brings forward. Yet our correspondent will find in the book much cognate information and, supposing him not to be already familiar with it, much that is suggestive of the elucidation for which he is inquiring.

[1] THE LANCET, April 2nd, 1904, p. 969.

TREATMENT OF INGUINAL HERNIA BY EXERCISES.

IN the *Yale Medical Journal* for February Dr. Jay W. Seaver recommends exercises in the treatment of inguinal hernia in the young, a method which does not appear to have received attention previously. The *rationale* of the treatment is obvious; the inguinal canal is surrounded by muscles which the more they are developed the more they resist the passage of any of the abdominal contents. Dr. Seaver finds that of college students nearly 3 per cent. have indirect inguinal hernia and that other forms of hernia are very rare. Physical examination of the Yale students showed that in only about 16 per cent. of those suffering from hernia was a truss worn; many were unaware of the existence of the hernia. By practice a patient can acquire the power of contracting particular parts of the abdominal wall. Almost any person can in a month learn to contract the lower abdominal wall near the pubic arch and can make this contraction pass as a wave up the abdominal wall. Or one side of the abdomen may be contracted and then the other. The following are some of the exercises which Dr. Seaver recommends. They are performed twice or thrice daily for from five to eight minutes. 1. Lying on the back on a rug with a thin cushion under the head the right knee is raised and drawn as close to the chest as possible. Then the leg is extended and the same movements are performed with the left. These movements are repeated five times. Then both knees are raised towards the chest and the pelvis from the floor, placing the hands palms downwards under the hips. These movements are repeated from five to ten times. 2. Lying on the back the feet are drawn up to the buttocks and then the hips are raised from the floor as far as possible bearing the weight on the feet and shoulders. This exercise is repeated ten times. 3. The right leg is raised to the perpendicular keeping the knee as straight as possible, the left leg lying straight on the floor and the hands with the palms downwards being under the hips. This is repeated five times on both sides. Then both legs are raised to the perpendicular an equal number of times. 4. Standing erect with the head and hips held well back the patient inspires deeply and at the same time retracts the lower abdomen as much as possible. Then he relaxes the abdominal wall and expires. He repeats this from five to ten times and while contracting the lower abdomen pushes out the upper; then he reverses the movement, contracting the upper abdomen, causing the wave of contraction to pass downwards over the abdominal wall. 5. Lying in the horizontal position the patient raises the body to the sitting posture, keeping the neck well extended. After from two to three months of this treatment Dr. Seaver advises the substitution for the truss of a flat pad (a convex one would tend to open the inguinal ring). He has used with good results a disc of polished wood 60 millimetres in diameter having a segment removed

from the side which lies against Poupart's ligament. This pad is kept in place by a rubber-covered steel spring. When the growth of muscular tissue does not seem sufficiently rapid somewhat vigorous massage of the inguinal region may be performed. The best results are obtained in patients with an inclination for athletics. Dr. Seaver, after a period sufficiently long to test the permanent value of the treatment, has found it successful in 75 per cent. of patients under the age of 25 years. Though as a general rule the treatment appears to be applicable only to those who have not reached physical maturity, occasionally it is successful in older patients. For example, a man, aged 38 years, had worn a truss for 12 years to support a hernia. The truss acted satisfactorily but the hernia descended when it was removed. Dr. Seaver recommended operation but the patient would try exercises though he was told that they were useless. The hernia never descended after the treatment was begun and a year later the ring was of normal size. But the use of the truss was still advised. Subsequently it was worn only in the afternoon and still later it was worn only during vigorous exercise of which he was very fond. Finally, it was entirely discontinued and although he indulged in heavy gymnastics the hernia did not recur.

HYGIENE AND TEMPERANCE AS SCHOOL SUBJECTS.

IT is proposed in a petition signed by a majority of medical practitioners in the United Kingdom that instruction in elementary hygiene, with special reference to the effects of alcohol, should be included among the compulsory subjects of school education. It is pointed out that such instruction is already provided for in the optional code. Attention is also directed to the fact that it forms part of the regular course in army schools. Of Canada as a whole, of Victoria, and of Natal the same is true. In South Australia temperance teaching is systematically carried out. In the United States of America the principles of health and the necessity of temperance are taught, if possible, with even more marked insistence. There can thus be no doubt that the terms of the petition are in accord with the views and the practice of the English-speaking world. Its wording is moderate and judicious and its object, as we have noticed, has already obtained the countenance of the Education Board. Of necessity any project of the kind can only be of limited utility while its promotion is left to the mere choice of individuals. On the other hand, the importance of the subject is generally admitted. Health and sobriety are obviously among our most indispensable national assets. The present relation of education to them can only be justified on the ground that our knowledge of them is instinctive or that it comes to us as a result of our social conditions. But this is not the case. We are therefore left with the alternative that such instruction as is needful for the right understanding of health and temperance must be systematically given. In the public interest we trust that it will be so given.

AN UNUSUAL FORM OF LEAD PARALYSIS

Dr. P. Merklen and Dr. H. Guiard have published in the *Archives de Neurologie* for April an account of a condition resulting from lead poisoning not recorded hitherto and believed by them to be rare. The case was one of lead paralysis of very limited localisation, the causation of which was clear, though differential diagnosis was a matter of difficulty. Under prolonged treatment the cure of the patient was complete. The case was one of saturnine paralysis affecting only a small and limited group of muscles of one hand, its rarity being likely to embarrass the diagnosis. Tanquerel des Planches in his classical thesis of 1834 on lead encephalopathy records a case of isolated paralysis of the fingers and ball of the thumb resulting from lead poisoning, together with a similar involvement of the extensor muscle of the great toe. The case recorded by Dr. Merklen and Dr. Guiard was that of a man aged 35 years, with a good family history except that his mother died at the age of 57 years from rheumatism. There was no personal history of syphilis or of other infectious disease. On June 20th, 1902, the patient suffered from neuralgic pains in the right ilio-lumbar region which disappeared after a little while. Afterwards he had a feeling of "swelling" of the last two fingers of the right hand and of the corresponding portion of the palm. This paræsthesia was accompanied by a general bodily feeling of coldness. Physical examination showed loss of sensibility to touch and pain in the affected area, while the thenar eminence was seen to be atrophied slightly. The first interosseous space also showed a marked flattening (atrophy) of the muscles, which was barely perceptible in the other spaces. He now found it difficult to pick up a coin from the floor. The atrophy and paralysis gradually increased locally. Meanwhile the troubles of sensibility disappeared and only the atrophy remained to disquiet the patient. The grip of the right hand as shown by the dynamometer was one-tenth of the power of that of the left hand. The movements of the thumb were limited and weak. Sensibility to touch and pain was found to be dulled along the radial nerve, especially in its palmar distribution, but sensibility to hot and cold sensations was well preserved. The muscles of the forearm reacted normally to electricity (faradic and galvanic) but the reactions were diminished in the muscles of the hand. There was, however, no reaction of degeneration. Excluding notions of myelopathy and myopathy a peripheral neuritis was diagnosed. On careful inquiry it was found to be due to lead poisoning, as the patient had to handle lead compounds in textile fabrics in the manufacture of which he was engaged. A slight "blue line" was discovered on the gums. He was put under treatment with alkaline iodides, massage, and local applications of electricity. In five weeks considerable improvement had resulted; in seven weeks more there were marked evidences of recovery and the atrophy was visibly passing away; eventually power returned to the right hand, the grip of which was equal to more than half of that of the left hand.

WEIGHTS AND CORRELATIONS OF THE VISCERA.

THE study of the biometric constants of the human body is almost confined to a somewhat limited group of workers who, in addition to an acquaintance with anatomy and pathology, possess a taste for statistics, the analysis of multitudinous data, and arithmetical computation. In a recently issued number of *Biometrika*[1] Mr. M. Greenwood, jun., has published a useful contribution to an important branch of the subject, the full title of his paper being "A First Study of the Weight, Variability, and Correlation of the Human Viscera, with Special Reference to the Healthy and Diseased Heart." His data were obtained from the pathological records of the London Hospital and are distributed for purposes of classification and comparison in 16 tables, most of which are of dimensions exceeding half a page of THE LANCET. He considers the subject under four aspects—namely (1) the average sizes, variabilities, and correlations of the heart, liver, spleen, and kidneys in the general population, diseased and normal, to be found within a London general hospital; (2) the same quantities or ratios for healthy or

[1] A Journal for the Statistical Study of Biological Problems. Vol. iii., Part 1. London: C. J. Clay and Sons (Ave Maria-lane) and H. K. Lewis (Gower-street). Pp. 112. Price 10s.

normal organs only; (3) the influence of age on the biometric constants for the viscera in man; and (4) the influence of certain special diseases. Selecting as illustrative examples only the figures relative to the heart and liver (of course taken jointly or in combination) we observe that for the general hospital population the mean weights of the heart and liver are given respectively as 13·53 and 63·01 ounces, the correlation of heart and liver being 0·1931 ± 0·0175. This weight of the heart is obviously higher than that usually given in anatomical text books and in this place Mr. Greenwood remarks that in making the records there has been "some special reason for measuring livers in the case of very large hearts." For healthy organs the mean weights of the heart and liver are given respectively as 11·04 and 60·44 ounces, the correlation of heart and liver being 0·2780 ± 0·0329. In cases of pneumonia the mean weight of the heart is above that of the healthy heart but is slightly below that of the general hospital population heart. On the other hand, valvular disease and aortic aneurysm send up the weights of both the heart and the spleen not only vastly above their healthy values but markedly above the values for the general hospital population.

TRAUMATIC HÆMATOPERICARDIUM.

IN the *Boston Medical and Surgical Journal* of March 3rd Dr. J. L. Morse has reported an interesting case of hæmatopericardium due to an unusual cause. A girl, aged two and a half years, while looking out of a window fell forwards on a needle which was on the window-sill. The needle entered the chest near the right edge of the sternum and broke off. An incision was made over the point of entrance but nothing was found. She remained apparently well for two weeks and then her appetite failed, respiration became difficult, and she complained of pain in the side. On July 10th, a month after the accident, she came under Dr. Morse's care. The cardiac impulse could not be felt and the heart sounds were faint. Cardiac dulness extended on the right to the parasternal line and upwards to the junction of the manubrium and gladiolus and to the left first intercostal space. Dulness extended over the whole of the left chest in front and thence backwards as far as the posterior axillary line. Over this area respiration was diminished. The temperature was 100·6° F., the pulse was 130, and the respirations were 50. On the 11th radioscopy showed that the cardiac shadow extended up to the first rib on both sides, to the right two and a half centimetres from the middle line, and to the left three centimetres from the middle line. No needle was seen. Thus the physical signs were not characteristic of fluid in the pericardium but the radioscopic examination was. An aspirating needle was introduced into the right fifth intercostal space at the edge of the sternum and bloody fluid escaped under considerable pressure. As serous or purulent fluid was expected it was thought at first that the heart had been tapped and the needle was at once withdrawn. But it was soon evident that the heart had not been wounded, for its action was unaffected. The needle was then introduced into the sixth left space, nine and a half centimetres from the middle line. Dark bloody fluid issued under great pressure. More than 100 cubic centimetres escaped; then 400 cubic centimetres more were withdrawn by aspiration. The heart sounds became louder and a friction sound was heard. The child was much relieved by the operation. On the 13th a feeble cardiac impulse was visible. The cardiac dulness extended upwards to the upper border of the third rib, to the right two and a half centimetres from the middle line, and to the left seven and a half centimetres in the sixth space. The front of the left chest was still slightly dull. Radioscopy showed that the cardiac shadow extended upwards to the lower border of the second rib and to the right about one and a quarter centimetres from the middle line in the fourth and fifth spaces. It is difficult to explain why the cardiac area appeared to be normal on radioscopy but larger on physical examination. The child was discharged well on July 15th. Just before her discharge radiographs were taken and showed that half of the needle still remained behind the sternum. Operation was advised but declined. Dr. Morse explains the fact that an interval elapsed between the accident and the onset of symptoms by supposing that the needle did not at first reach the pericardium but later worked its way to it. The fact that the needle did not scratch the pericardium and cause fresh bleeding after the removal of the fluid was no doubt due to its becoming encapsuled.

A SESSIONAL meeting of the Sanitary Institute will be held at the Parkes Museum, Margaret-street, London, W., on Saturday, April 30th, at 11.30 A.M., when a discussion will take place on Food and Meat Inspection. The discussion will be opened by Colonel J. Lane Notter, R.A.M.C., and Mr. W. Hunting, F.R.C.V.S. General discussion is invited. The chair will be taken by Mr. Charles Game, chairman of the Cattle Markets Committee, Corporation of London. The meeting will adjourn for luncheon at 1.30 P.M. and at 3 P.M. a visit will be paid to the Metropolitan Cattle Market, York-road, Islington, conducted by Mr. J. King, M.R.C.V.S. Tickets for admission of visitors may be had on application to the secretary, Mr. E. White Wallis, 72, Margaret-street, London, W. The institute dinner will be held in the Whitehall Rooms of the Hôtel Métropole, London, S.W., on Monday, May 2nd. Dr. Robert Farquharson, LL.D., M.P., Vice-President of the institute, will take the chair and will be supported by the Right Hon. Sir John Ure Primrose, Sir William Church, Bart., Sir R. Douglas Powell, Bart., Sir R. M. Hensley, Sir Henry Norbury, Sir William Taylor, Sir William White, Mr. J. Tweedy, Dr. J. Groves, the Mayors of Hampstead and St. Marylebone, and the council of the institute.

WE have received the first of the scientific reports of the investigations of the Cancer Research Fund which deals with the zoological distribution, the limitations in the transmissibility, and the comparative histological and cytological characters of malignant new growths. Dr. E. F. Bashford's and Dr. J. A. Murray's paper read before the Royal Society on Jan. 21st and published in THE LANCET of Feb. 13th, 1904 (p. 413), contains the gist of this report which records fully the attempt made to investigate cancer from a standpoint in keeping with the extent to which it pervades the animal kingdom. The investigations have been conducted by Dr. Bashford, the general superintendent and director of the Central Laboratory, whose work has been, to use Dr. Bashford's words, "in every sense carried on conjointly with Dr. J. A. Murray, who shares with me the responsibility for the observations and the deductions based upon them."

AT a meeting of the Metropolitan Asylums Board held on April 16th a memorial signed by some 13 medical superintendents was considered protesting against a recent decision of the hospitals committee that the supply of coal, gas, or electricity should be limited. A somewhat heated discussion followed but eventually a motion, proposed by Mr. W. H. Ecroyd, seconded by Mr. G. S. Elliott, and warmly supported by Mr. W. Crooks, M.P., was carried to the effect that the memorial should be remitted to the General Purposes Committee for consideration and report.

His Majesty the King, having been invited by the secretary of the South London Schools' Athletic Association to be

present at the Annual Athletic Festival at Herne Hill on June 22nd, has replied through Captain Ponsonby that, while regretting, owing to his numerous engagements at that time, he will not be able to be present, he regards with satisfaction the importance which is now attached to the physical development of children and that he takes great interest in all institutions which have for their object the improvement of the physique of the young.

VIVISECTION AND MILK-SUPPLY.

WITH the approach of warmer weather the necessity of increasing the severity of sanitary precautions annually recurs. Of course, it is on infant life that any defect in sanitation makes itself most felt. As infants depend on milk, and very often it is not the mother's but cow's milk, there is, no doubt, a marked connexion existing between the quantity and quality of the milk-supply and the prevalence of infantile mortality. So convinced are many of our sanitary authorities on this point that they have induced their town councils to obtain special legal powers more effectively to control the milk-supply. This is notably the case with the corporations of the cities of Manchester and Glasgow. The remarkable series of experiments made by Professor S. Delépine provided ample scientific evidence to prove how necessary it is to supervise minutely milk supply and distribution. After examining milk during many years, Professor Delépine concluded that to detect a small number of bacilli within a practical length of time the inoculation method was much more trustworthy than the mere use of the microscope. The tubercle bacillus was only detected with the microscope in one half of the samples of milk which were proved by inoculation to be tuberculous. At the Congress on Tuberculosis held in London in 1901, Dr. James Niven, medical officer of health of Manchester, related that in 1899 samples of mixed milk from 401 farms supplying the city of Manchester were taken and on examination 47, or 11·7 per cent., proved to be tuberculous. Of 108 samples of milk taken at the railway stations 18·5 per cent. were tuberculous, consequently, and if this cannot be stopped, it would apparently mean that at least once in ten times the Manchester purchaser of milk is served with milk containing pathogenic germs of tuberculosis. It must be confessed that, in any case at first sight, these figures seem to defeat the purpose for which they are brought forward. If in every ten cups of tea we get one dose of the tubercle bacilli it does not seem as if these germs were very mischievous, otherwise no one would escape. It is, however, in regard to infants that the greatest danger arises and then also it is not merely a matter of infection but of the amount of infection. This question of the amount applies to infants, for with them milk is the sole or the principal food given and excessive infantile mortality is still very prevalent where it is difficult to obtain pure milk.

The difficulties of dealing with tuberculous cows are very great. It has been clearly shown that a tuberculous cow may at first appear perfectly healthy, that no mere manipulation of the udders discloses any suspicious symptom. Then, again, the contaminated milk, if only examined by the microscope, will not always appear to be infected. Nevertheless when the bacilli are not numerous enough to be detected by the microscope they will be very perceptible in the deep inguinal glands of the guinea-pig 15 days after inoculation. Later the presence of tubercle may be detected by the veterinary surgeon who examines the udders of the cow but there are periods when the presence of the disease can only be detected by experiments on living animals. How the antivivisectionists mean to meet this difficulty it is hard to say. Mr. J. S. Lloyd, late veterinary surgeon to the city of Manchester, calculated that out of a grand total of 9576 cows, the milk of which was tested for tuberculosis, there was 0·54 per cent. of the cows with tuberculous udders. According to the agricultural returns for 1900 the number of cows in milk in England was 1,899,623. If the proportion resulting from the very extensive examinations made by the Manchester authorities is applied to England then there should have been 10,257 cows with tuberculous udders. Applying thes ame calculation to Great Britain we have 2 620.901 cows in all of which 14,152 had tuberculous udders. Those persons who are so very much concerned about the welfare of animals might consider the condition of these 14 000 to 15,000 tuberculous cows that in all probability are now in our midst. It is, perhaps, of no use to ask the antivivisectionist to display some concern as to the fate of the infants who drink the milk derived from these cows and to consider that this milk being mixed with other milk we have, as a result, the contamination of about 10 per cent. of the total milk-supply, even though only about one cow in 200 has tuberculous udders. But these tuberculous cows are either prematurely slaughtered or live to suffer from the disease which they have contracted. It might be worth while to attempt to do something to save the cows from the danger of contamination. Setting human beings aside as unworthy of consideration where animal life is concerned the question might be put to the antivivisectionist whether it is not worth while to sacrifice a few guinea-pigs for the sake of saving a much larger number of cows. The fact that this would save a still greater number of human beings will, we trust, not mitigate against any effort being made on behalf of the cows.

The great points are the immediate detection of tuberculosis and the isolation of the affected cow before it has time to contaminate other cows. For this purpose some towns have acquired powers that are more extensive than exist elsewhere. Within the boundaries of the town itself the matter depends on the sanitary authorities but the greater part of the milk of large towns comes from beyond the boundaries. The cowsheds, &c., within the town may, of course, be inspected but special powers have to be confirmed by Act of Parliament so as to extend this right of inspection to farms situated in the country. Even when this is granted an order must first be obtained from a justice having jurisdiction in the place where the sample is to be taken. Should it then be proved that the cow in question is tuberculous the owner can be forced to isolate the animal and can be fined to the extent of £5 if he does not do so.

The farms, however, are scattered over so many counties that it is almost impossible to control them properly. When samples are taken at the station on the arrival of the milk train the farmer somehow hears of it and by the time a magistrate's order has been obtained to inspect his farm the cow or cows that contaminated his milk have been slaughtered or sold or sent elsewhere. But even if the cow remains and its diseased condition is demonstrated the farmer can only be compelled to isolate the cow and there is no one to watch in order to see that such isolation is constant and effective. But, what is worse, the farmer is free to sell the cow and it may be taken to some other locality where the fact that it is diseased will be more successfully concealed and there will be no one to prevent the sale of its milk. The last published annual report of the medical officer of health of the city of Manchester shows how the system works, for this is one of the towns which possess special powers in regard to milk-supply. It is stated that during the year 1902, though 5649 inspections of cows were made in the Manchester cowsheds, not a single cow was found to be suffering from tuberculosis of the udder. This shows what inspection can do and it is more difficult to keep cows healthy in town than in the country. Yet how different was the result when dealing with the milk that came from the country where, in spite of the Manchester Corporation (General Powers) Act of 1899, efficient control cannot be exercised. During the year 420 samples of milk coming from 345 farmers were taken at the Manchester railway stations. Of these farmers, 196 reside in Cheshire and 25 of them, or 12·72 per cent., sent tuberculous milk. 104 live in Derbyshire and nine of them—that is, 8·65 per cent.—sent tuberculous milk. From Staffordshire 4 01 per cent. and from Lancashire 8·31 per cent. of the farmers sent tuberculous milk. On the 345 farms there were 6210 cows and in following up the evidence of the presence of tuberculosis at 36 farms 1236 cows were examined. 31 cows were found with tuberculo-is of the udder and 15 were forthwith slaughtered, but 15 disappeared, were sold, and no one knows what further mischief they may have done. As 36 samples from 345 farms taken during 1902 contained tubercle bacilli this is equal to a percentage of 10·43. There is surely something very striking in this percentage of contamination, particularly when compared with the fact that the cows in the town cowsheds were inspected 5649 times and not a single case of tuberculous infection of milk was found.

Such a comparison is a clear proof that great improvements are possible where efficient control can be established. But a long time must elapse before the numerous small farms scattered over rural districts can be brought up to the level of modern sanitary requirements. In the meantime the presence of infection has to be demonstrated positively before the legal power to act can be obtained. But the antivivisectionist would render such a demonstration impossible. The report, after giving the above figures, goes on to say:—

> There is no doubt that as time goes on the detection of tuberculosis of the udder becomes increasingly difficult. The class of cases met with at one time are now almost never seen. I refer to the well-marked cases in which there was no difficulty in diagnosis. In by far the greater proportion of cases now found a reliable diagnosis is impossible without bacteriological examination. The cases found being so slight it is advisable in making an inspection of a herd of dairy cows to make one's observations as complete as possible, always remembering that you can only form a suspicion, and that it is for the bacteriologist to say whether the suspicion is well founded or not. In several cases I have taken samples from cows whose udders have shown no sign of disease, my suspicions being perhaps aroused by some other symptom or combination of symptoms external to the udder, and the milk has been found to be tuberculous.

One of the worst cases occurring during the year related to five samples of milk taken at a railway station from separate cans that all came from a large dairy in Shropshire. Professor Delépine produced tuberculosis with three of these samples and the animals experimented upon with the two other samples died from septic infection. With such evidence to go upon it was possible to obtain magistrates' orders, and ultimately, arising out of this one case alone, 75 farms, 181 cowsheds, and 2420 cows were visited. Very little of the milk from these cows had been sent to Manchester, it being for the most part despatched to London. Many of the cowsheds were in a filthy and very insanitary condition and contagious abortion prevailed. In one farm, out of 47 cows 34 aborted. All these evils would probably have remained undiscovered but for Professor Delépine's experiments on animals. Again, it may be asked whether it was not worth while to sacrifice a few guinea-pigs so as to improve greatly the condition of the 2420 cows concerned in the experiments made with the five samples of milk. Nothing shall be said as to the human beings who in Manchester and London consumed the milk derived from all these cows and who were saved from further contamination by the sacrifice of a few guinea-pigs. The antivivisectionist does not admit that animal life should be sacrificed to save human life. In these circumstances he cannot logically be a meat-eater but even vegetarians recognise that it is necessary to have milk. Some might go so far as to allow that it is necessary to have leather. We are not aware that the antivivisectionist has ceased to wear boots or that he objects to leather harness for his horses. Then there are many industries that employ large bones, so that when the antivivisectionist vegetarians have triumphed along the whole line the existence of cows and the drawing of their milk may still be tolerated. How is the health of these cows going to be preserved? More than 2000 cows connected with one single Shropshire dairy have every reason to be grateful to Professor Delépine for his experiments on guinea-pigs. But the antivivisectionists would have prevented these experiments and therefore it seems that instead of reducing the amount of suffering which animals endure they would, on the contrary, greatly increase the prevalence of disease among them. It is obviously a mistake to imagine that vivisection is only useful to human beings. When applied for the control of milk-supply it becomes the means of saving from disease not human beings only but also a vast number of cattle. The discovery of a case of tuberculosis of the udder means official pressure being brought to bear so that the sanitation of cowsheds, &c., shall be improved. It has been stated that there are more than 2,500,000 milk-giving cows in Great Britain. Is this not a total of animal life worth considering from the humanitarian point of view? The sanitary improvements which the control over milk has shown to be necessary will also affect beneficially the cows that are not milk givers, and the bulls, the bullocks, and the calves as well. The argument might be carried much further, as it applies to many other animals. What, however, has been said in regard to milk will doubtless suffice. Here the practice of vivisection has proved of benefit to the cows. Of course, it is obvious that what is useful—for instance, good sanitation and antiseptic precautions—to the medical practitioner when treating human beings as his patients is also useful to the veterinary surgeon when treating animals as his patients. Animal life, especially in the case of animals of higher organic development such as horses, dogs, cattle, sheep, and others, has as much to gain from the knowledge which is derived from the practice of vivisection as has the human family itself.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY meeting of the Council was held on April 10th, Mr. JOHN TWEEDY, the President, being in the chair.

In accordance with the recommendation of the Jacksonian Committee the Jacksonian Prize was awarded to the author of the dissertation on the Various Forms of Conjunctivitis, their Pathology and Treatment, bearing the motto "Fiat lux." The PRESIDENT opened the envelope bearing this motto and declared Mr. M. Stephen Mayou, F.R.C.S., to be the author of the successful essay and it was resolved that Mr. Mayou should be requested to attend the next meeting of the Council to receive the Jacksonian Prize. It was resolved that the subject for the Jacksonian Prize for the year 1905 should be the Pathology and Treatment of Deformities of the Long Bones due to Disease occurring during and after Adolescence.

In accordance with the recommendation of the Triennial Prize Committee the Collegial Triennial Prize was awarded to Mr. T. R. H. Bucknall, F.R.C.S., for his dissertation on the Pathological Conditions arising from Imperfect Closure of the Visceral Clefts. It was resolved that Mr. Bucknall should be requested to attend the next meeting of the Council to receive the Collegial Triennial Prize and that he be asked whether he would prefer the John Hunter Medal executed in gold to the value of £50 or the said medal executed in bronze with an honorarium of £50. It was resolved that the subject for the next triennial prize should be the Effects of Nerve Lesions on Growth and Development.

A report was received from the Laboratories Committee and was adopted. Among other matters it contained the statement that Dr. T. G. Brodie has collected one volume of papers relating to researches carried out in the laboratories during the early period of his tenure of office and that he hopes shortly to be in a position to issue a second volume containing the papers published during the later period. It has not been found possible to compile a volume of papers published during Professor G. Sims Woodhead's term of office as director and therefore the secretary has been requested to print an index of all papers issued from the laboratories, with references, where known, to the publications in which they appeared.

A report was received from the Conjoint Committee and was adopted. It dealt with the course of study during the first year of the curriculum and the scope of the first examination. It submitted recommendations and syllabuses drawn up after consultation with the examiners and teachers on the various subjects.

Mr. W. H. A. Jacobson was elected a member of the Court of Examiners in the vacancy occasioned by the resignation of Mr. Henry Morris.

The Council proceeded to the election to the Fellowship of a Member of 20 years' standing and Mr. Edward Ward, professor of surgery in the Yorkshire College, Leeds, was elected.

A letter was read from the Irish branch of the British Dental Association calling attention to the judgment in "O'Duffey *v.* Jaffe, Surgeon Dentists, Ltd.," and asking the College to instruct its representative on the General Medical Council to support action on the part of that body towards petitioning the Privy Council to initiate legislation necessary to obviate the evils disclosed. Mr Henry Morris, the representative of the College, was requested to take such steps as seemed to him desirable in order to assist this matter.

The PRESIDENT reported that Mr. A. Pearce Gould's period of office on the Court of Examiners would shortly expire and that the vacancy thus occasioned would be filled at the next meeting of the Council on May 12th, together with the vacancy caused by the resignation of Mr. Henry Morris, Mr. Gould being a candidate for re-election. Applications for the examinership must be sent in on or before May 4th.

Looking Back.

FROM

THE LANCET, *SATURDAY*, April 22, 1826.

"THE Chinese, whom I venture to pronounce the most unique, and the most original people at this day on the face of the earth, look at medicine in two points of view, a favourable one, and an unfavourable.

The sincere, diligent, candid, and benevolent practitioner who toils for the health of his neighbours and fellow-countrymen, they regard as holding a place equal in importance to that of a virtuous minister of a powerful monarch, who is a blessing to the empire. On the other hand he who has no higher motive than his own emolument, and who, from his ignorance or his foolhardiness, as often kills as cures, they regard with sovereign contempt, and feel ashamed that such men should be called by the same name as the sincere votaries of the healing art, which, by a very appropriate and honourable distinction, they call Jinshuk, 'the benevolent art.' The ideas I have thus put into English, are taken from the preface of a work in forty volumes, compiled by the united efforts of about a hundred persons connected with the Imperial College of Physicians at Pekin during the reign of the late decided and prosperous monarch, known by the name, or rather title, of Këen Lung, which being interpreted, mean '*Celestial Glory*.' This book, which is the latest national work in China on the subject to which this paper has a reference, was published about the year A.D. 1740.

There is an individual and private work in eleven volumes, printed not more than fourteen years ago, entitled E Shoo Hwuy-Tsan, '*A Comparative Compendium of Medical Books*.' This is the latest publication which has any pretensions to particular notice that I have seen.

The imperial work above referred to, is entitled E tsung kin-këen, '*A Golden Mirror of the most approved Medical Practice*.' All books in China referring to medicine, that could be procured by purchase or by loan, were collected, and traditional popular MSS. were sought by the order of government. In four years it was completed. In this work it is maintained, that in the remote ages of antiquity, medicine and the affinities and correspondencies in nature were better understood than at any subsequent period.

Chinese writers attribute the ascertainment of the properties of herbs to Yente, the illustrious monarch an antediluvian personage in their annals, placed about 3000 years before our era. This illustrious king, Yente, is otherwise called Shinmuy, which appellation means 'Divine Husbandman.' About the same time lived another king, Hëen-yuen, and a statesman named Ke-pih, who, with the monarch just now named, formed, by their personal efforts, a sort of royal society for physical and medical research in China, and in allusion to them, medicine is sometimes called '*the art of Ke hees*.' To Ke-pih the origin of Tsze-chih, i.e. '*impuncture*,' is attributed. There are two fragments yet extant attributed to Ke-pih, and which (according to the imperial editors and other writers) are the most ancient notices in China concerning the cause and cure of diseases.

Both these medical fragments are given in the work published fourteen years ago by a private hand, to which I referred in the beginning of this paper. They are considered more ancient than the classical books collected and edited by Confucius; but how their authenticity and genuineness are traced, I know not.

The Shoo-king compiled by Confucius, mentions Woo-hëen as skilled in the cure of diseases about 3000 years ago. The next names of eminence in this department are Tsang-kung and his pupil Pëen-tsoo, otherwise called (Looe) Doctor of Loo, who lived about 2100 years ago. Shun-yue, a doctor of some note, lived about this time.

In the fourth century Wang shuh-ho was chiefly famous for his work on the pulse, an epitome of which is given in Du Halde's China.

In the sixth century Chin-kwei lived, who is said to have cut into the abdomen, removed diseased viscera, stitched up the part again, and healed the patient in a month's time. He gave an opiate to the patient, which rendered him insensible, before he began the operation. The opiate is called Ma-fuh-san, which seems to express that it was in the form of a powder.

There was one man of eminence called Heuyin-sung, who rather undervalued the doctrine of the pulse, and said he could do without it.

The above-mentioned are a few of the desultory names of eminence connected with China; there are four persons still more eminent as writers, and who are well known by the epithet Sze-ta-kea, 'the four great masters,' or leaders of separate schools, and authors of distinct systems. From the first of them to the last embraced a period of twelve centuries.

The first is King-chung-chang. He lived during the How-han, A.D. 220, and was a native of Nan-yang.

The next is Lew-chow-chin. He lived under the Sung dynasty, A.D. 1200.

The third is Le-tung-hwan, who lived under the first Tartar dynasty, A.D. 1300; and the last is

Choo-tan-ke, a native of Che-keang province, who lived during the late China dynasty, Minv, A.D. 1500.

The first name is considered 'The father of Physic:' he left numerous writings, which are still much read."[1]

MEDICINE AND THE LAW.

Unqualified Practice under the Cover of a Limited Company.

AT Bolton borough police-court an unqualified person was recently convicted under Section 3 of the Dentists Act, 1878, of having unlawfully taken and used the title of dentist, implying that he was registered under the Act. Evidence was given that outside the premises where the unqualified practice took place appeared the inscription, "Reynolds, dentist," and that in a room fitted up as a dental surgery the defendant, whose name was Richard Willoughby Reynolds, was asked if he was "Mr. Reynolds, dentist," and answered that he was "one of them." In cross-examination it was denied that words were to be seen indicating that the business was carried on by a limited liability company. Evidence was, however, called by the defence to prove the registration of a company under the Companies Acts with the title, "Reynolds and Sons, Dentists, Limited," and an agreement was put in made by the "company" on the one side and the defendant on the other. It was also alleged that the full title of the company was displayed. It was not suggested that the defendant or anyone holding any shares in, or connected with, the company was qualified. The advocate for the defence contended that the defendant was merely the servant of a company, that the practice of dentistry by an unqualified person was not illegal, and that the magistrates must be satisfied that Reynolds had held himself out to be a person on the Dental Register. The magistrates found as a fact that Reynolds had committed the offence with which he was charged, and being further pressed for a finding as to his relations with the company found that he was acting as principal, basing their view upon his own admissions. They inflicted a fine of £10 with costs and declined to state a case for the consideration of the High Court. The position which arises when an unqualified person registers a company with a view to practising medicine or dentistry under a name which obviously implies qualification and registration but to which the word "limited" is appended was fully discussed in THE LANCET of March 19th, p 814. It was then pointed out that the company cannot be summoned as such and convicted of using a name or title implying registration because a corporation cannot in any case be placed upon the medical or dental register. On the other hand, an individual who practises under cover of a company can be convicted of the offence if the bench is satisfied that as a fact he committed it. The question, of course, is what the titles used would imply to the persons to attract whom they are displayed.

The Supply of Artificial Teeth by Unregistered Persons.

A somewhat analogous case came before the Divisional Court on April 18th when the Lord Chief Justice and Mr. Justice Wills upheld the decision of a county court

[1] Excerpt from Review of *Medical and Surgical Cases* by Edward Sutcliffe. Queen-street, 8vo, pp. 484. Vol. II. London, 1825. Printed for the author and sold by Hamilton and Co., Paternoster-row. Quotation from Appendix, "for which," said the Editor of THE LANCET, "as he informs us, he is indebted to 'Dr. Morrison, the apostle (he might have said first Oriental scholar) of the age.'"

judge in a case in which unqualified persons trading as a limited company sued for dental work. The claim was in respect of filling teeth and of a partial set of artificial teeth supplied. The county court judge had allowed the claim so far as it was for making the set of teeth and not for fitting them or for filling teeth, and the appeal was brought by the defendant against this decision. The Dentists Act, 1878, provides that "a person shall not be entitled to recover any fee or charge for the performance of any dental operation or for any dental attendance or advice unless he is registered under this Act or is a registered medical practitioner." In dismissing the appeal both judges expressed reluctance to adopt the construction of the Dentists Act which the terms of the section quoted rendered necessary, laying stress on the importance to the public that patients should be supplied with properly constructed teeth, supplied and fitted by qualified dentists. The Lord Chief Justice, however, was of opinion that "dental operation" must refer to an operation performed upon the mouth of the patient and he also called attention to the wording of the corresponding section of the Medical Act in which the words "any medicine supplied" are inserted. The Dentists Act contains no corresponding words applicable to artificial teeth. His lordship also pointed out that such teeth were no new invention but were well known as work within the scope of the dentist's profession when the Act was passed. The matter is therefore one for future legislation if any change is to be brought about and the decision settles a point which has long been considered doubtful.

The Regulation of Underground Bakehouses.

At Bradford police court on April 16th the stipendiary magistrate, Mr. Charles Skidmore, gave his decision with regard to a summons taken out by the Bradford corporation under Section 101 of the Factory and Workshop Act, 1901, against a firm of bakers using an underground bakehouse. It had been submitted on behalf of the defence at the hearing of the summons that the bakehouse having been in existence before the passing of the Act was exempt from its provisions. The magistrate having referred to the authorities upon the subject upheld this contention and dismissed the summons. A case for the consideration of the High Court was applied for.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 9230 births and 5142 deaths were registered during the week ending April 16th. The annual rate of mortality in these towns, which had been 18·7, 18·7, and 18·3 per 1000 in the three preceding weeks, further declined last week to 17·6 per 1000. In London the death rate was 16·7 per 1000, while it averaged 17·9 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 8·2 in Reading, 9·7 in Southampton, 9·8 in Tynemouth, 10·3 in Walthamstow, 10·6 in Hanley, 10·9 in Hornsey, 11·0 in Hastings, and 11·5 in York; while the highest rates 22·1 in Birmingham, 22·3 in Smethwick, 22·9 Newcastle-on-Tyne, 23·2 in Wigan, 23·9 in Norwich, 24·0 in Great Yarmouth, 24·7 in Aston Manor, and 25·2 in Halifax. The 5142 deaths in these towns last week included 530 which were referred to the principal infectious diseases, against 532, 640, and 583 in the three preceding weeks; of these 530 deaths 216 resulted from whooping-cough, 191 from measles, 41 from diphtheria, 35 from diarrhœa, 21 from scarlet fever, 20 from "fever" (principally enteric), and six from small-pox. No death from any of these diseases were registered last week in Hastings, Bournemouth, Southampton, Northampton, Great Yarmouth, Burton-on-Trent, Smethwick, Grimsby, Barrow-in-Furness, York, West Hartlepool, South Shields, or Newport (Mon.); among the other towns the highest death-rates from the principal infectious diseases were recorded in Norwich, Wolverhampton, Handsworth (Staffs.), Birmingham, Aston Manor, Bootle, St. Helens, Salford, and Gateshead. The greatest proportional mortality from measles occurred in Tottenham, Norwich, Aston Manor, St. Helens, Salford, Burnley, Leeds, and Hull; and from whooping-cough in Hornsey, Wolverhampton, Walsall, Handsworth (Staffs.), Birmingham, Aston Manor, Wallasey, Bootle, and Newcastle. None of the other principal infectious diseases showed a marked excess in any of the large towns. Of the six fatal cases of small-pox registered in these towns last week three belonged to Gateshead and one each to Bristol, Leicester, and Tynemouth. The number of small-pox cases remaining under treatment in the Metropolitan Asylums hospitals, which had been 110, 126, and 134 at the end of the three preceding weeks, had further risen to 144 at the end of last week; 37 new cases were admitted during the week, against 54, 42, and 25 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday last, April 16th, was 1523, against 1585, 1570, and 1505 on the three preceding Saturdays; 172 new cases were admitted during the week, against 145, 153, and 141 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 383, 370, and 333 in the three preceding weeks, further declined last week to 295, but were 31 in excess of the number in the corresponding period of last year. The causes of 54, or 1·1 per cent., of the deaths in the 76 large towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Salford, Bradford, Leeds, Newcastle-on-Tyne, and in 42 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Manchester, Sheffield, Hull, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 22·3, 20·6, and 20·3 per 1000 in the three preceding weeks, further rose last week to 20·9 per 1000, but was 3·3 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch ranged from 13·8 in Perth and 15·0 in Greenock, to 22·3 in Paisley, and 26·5 in Dundee. The 690 deaths in these towns included 21 which were referred to measles, 20 to whooping-cough, 15 to diarrhœa, four to "fever," three to small-pox, one to scarlet fever, and one to diphtheria. In all, 65 deaths resulted from these principal infectious diseases last week, against 86, 72, and 57 in the three preceding weeks. These 65 deaths were equal to an annual rate of 2·0 per 1000, which was slightly in excess of the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 22, 23, and 14 in the three preceding weeks, rose again last week to 21, of which 12 occurred in Glasgow, five in Greenock, and three in Dundee. The deaths from whooping-cough, which had been 29, 23, and 19 in the three preceding weeks, rose again to 20 last week and included seven in Glasgow, five in Edinburgh, four in Dundee, and three in Paisley. The fatal cases of diarrhœa, which had been 15, nine, and seven in the three preceding weeks, increased again last week to 15, of which seven were registered in Glasgow, three in Edinburgh, and two in Dundee. The deaths referred to different forms of "fever," which had been four, four, and three in the three preceding weeks, increased again to four last week. The fatal cases of small-pox, which had been seven, five, and seven in the three preceding weeks, declined again last week to three and were all registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 165, 157, and 138 in the three preceding weeks, rose again last week to 152, and were 43 in excess of the number in the corresponding period of last year. The causes of 25, or nearly 4 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 30·4, 28·5, and 29·7 per 1000 in the three preceding weeks, declined again to 24·4 per 1000 during the week ending April 16th. During the past four weeks the death-rate has averaged 28·3 per 1000, the rates during the same period being 18·1 in London and 19·6 in Edinburgh. The 177 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 42 from the number in the preceding week and included 17 which were referred to the principal infectious diseases, against 14, 20, and 19 in the three preceding weeks; of these, 11 resulted from whooping-cough, four from measles, one from diphtheria, and one from "fever," but not any from

small-pox, from scarlet fever, or from diarrhœa. These 17 deaths were equal to an annual rate of 2·3 per 1000, the death-rates last week from the principal infectious diseases being 1·9 in London and 1·4 in Edinburgh. The fatal cases of whooping cough, which had been five, 11, and eight in the three preceding weeks, rose again last week to eight. The four deaths from measles corresponded with the number in each of the two preceding weeks. The 177 deaths in Dublin last week included 38 of children under one year of age and 42 of persons aged 60 years and upwards; the deaths both of infants and of elderly persons showed a slight decline from the respective numbers recorded in the preceding week. Four inquest cases and five deaths from violence were registered, and 55, or nearly a third, of the deaths occurred in public institutions. The causes of seven, or over 4 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet Surgeon Hamilton Meikle has been placed on the Retired List of his rank (dated April 6th, 1904).

The undermentioned Surgeons have been promoted to the rank of Staff Surgeon in His Majesty's Fleet:—Thomas Tendron Jeans, John Hunter Pead, and Hugh Somerville Burniston (dated May 16th, 1902); Harold Paget Jones and Albert Otto Bobardt (dated Nov. 14th, 1902); Sidney Thomas Reid (dated May 15th, 1903); and Charles Henry James Robinson and Harold Huskinson (dated Nov. 12th, 1903.)

ROYAL ARMY MEDICAL CORPS.

Captain St. J. B. Killery, attached to the Scots Guards, is nominated for appointment to the Royal Horse Guards. Captain J. M. Buist is appointed Clinical Pathologist to the Royal Herbert Hospital, Woolwich. Lieutenant Colonel G. A. Hughes, D.S.O., to be Colonel, vice R. de la C. Corbett, D.S.O., deceased (dated March 25th, 1904); Lieutenant J. H. R. Winder to be Captain (dated Feb. 27th, 1904). Lieutenant-Colonel R. C. K. Laffan retires on retired pay (dated April 16th, 1904). Captain G. Dansey-Browning is seconded for service with the Egyptian Army (dated March 31st, 1904).

ROYAL ARMY MEDICAL CORPS (MILITIA).

Lieutenant R. Le G. Worsley resigns his commission (dated April 16th, 1904).

CHANNEL ISLANDS MILITIA.

Royal Jersey Light Infantry: 2nd or East Battalion: Surgeon-Captain F. N. Gaudin to be Surgeon-Major (dated March 19th, 1904). 3rd or South Battalion: Medical Corps Section: Surgeon-Major P. B. Bentlif from Royal Jersey Artillery, to be Surgeon-Major, with seniority from July 27th, 1901 (dated March 19th, 1904): Surgeon-Captain A. C. Stamberg, from 2nd or East Battalion Royal Jersey Light Infantry, to be Surgeon-Captain, with seniority from Feb. 21st, 1903 (dated March 19th, 1904).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 2nd Devonshire: Surgeon-Major A. K. Crossfield to be Surgeon-Lieutenant-Colonel (dated April 9th, 1904). 1st City of London: Paul Joseph O'Sullivan to be Surgeon-Lieutenant (dated April 9th, 1904).

Royal Engineers (Volunteers): 1st Sussex: Sugeon-Lieutenant E. S. Cardell resigns his commission (dated April 16th, 1904).

Rifle: 1st Volunteer Battalion the Durham Light Infantry: Surgeon-Lieutenant L. J. Blandford to be Surgeon-Captain (dated April 16th, 1904).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Major T. W. Gibbard is permitted to complete three years as Adjutant of London Companies, R.A.M.C. (Volunteers).

The London Companies: Surgeon-Major V. Matthews to be Surgeon-Lieutenant-Colonel and to command under paragraph 55A Volunteer Regulations (dated April 9th, 1904).

THE LATE STAFF SURGEON W. ROGERS, R.N.: A MERITORIOUS ACT.

The late Staff Surgeon William Rogers, R.N., whose death was recorded in THE LANCET of April 16 (p. 1080), received his promotion to staff surgeon in 1845 for an act of devotion to duty which is well worthy of record. During 1845 H.M. steamer *Eclair* sailed from Sierra Leone with the crew suffering from yellow fever. At Buena Vista, one of the Cape Verde Islands, the whole of the ship's company were landed and the ship was thoroughly cleansed and fumigated. 31 of the officers and men died on the island in three weeks and it was then decided that the ship should return to England. Before leaving Mr. McClure, a naval surgeon, and seven seamen volunteered their services on the *Eclair* and Mr. McClure fell a victim to the fever. Before reaching Madeira the captain died and at that port Mr. Bernard, another naval surgeon, and two seamen volunteered their services. During the voyage from Buena Vista to England the ship lost at the rate of one man a day. On her arrival in England Staff Surgeon Rogers, then Surgeon, volunteered to board her and in attending to her stricken crew he contracted the disease himself. For a time he was dangerously ill but eventually recovered and received the promotion which he so well deserved. The *Eclair* was renamed the *Fair Rosamond* but a second outbreak of fever occurred on her and she was broken up.

A SOLDIERS' AND SAILORS' TEMPERANCE CLUB AT TOULON.

The *Revue Scientifique* of April 9th states that more than a year ago the Temperance Society of Toulon wrote to the majority of the officers in command of the Mediterranean squadron as well as to various commanding officers of the port inquiring what number of soldiers and sailors would be likely to make use of a temperance club. The result has been that upwards of 2000 men have declared themselves to be in favour of the formation of such a club provided that religion and politics are excluded. The institution will be an addition to the number of the "Foyers du Soldat" which already exist at Vincennes, Valence, and Saint-Etienne. Being situated at a naval station its full title will be "Foyer du Marin et du Soldat." The premises will comprise a large reading room provided with books, periodicals, and writing materials; a large recreation room with three billiard tables, a piano, and of course such games as chess, draughts, and dominoes; a store room for bags and other property belonging to the men; and a place for playing bowls, skittles, and similar outdoor games.

THE SENIOR MEDICAL OFFICER OF THE "PETROPAVLOVSK."

Andrew Nikolaevitch Volkovitch, who was the senior medical officer on board the battleship *Petropaclovsk* and who went down with his ship, came of a good family of the government of Smolensk. He was born in Minsk in 1870. He finished his course in the Military Medical Academy in 1894 and whilst still a student in 1892 he obtained leave to go into the Viatska government to assist to combat the then raging typhus fever and cholera. Amongst his numerous services there are counted three years which he passed with the Spitzbergen expedition in connexion with which he was decorated with a Swedish order for scientific services. Two years ago he was appointed senior medical officer on board the *Peresviet* in the Far East, but on his arrival there he was transferred by Admiral Scrydloff, then on the station and now again on his way there, to the *Petropavlovsk* where he remained until his death. He was married and leaves a widow and two young children. He obtained his doctor's degree in 1895.

DISEASE IN WAR.

In a lecture given on March 15th (states the *Novoe Vremya*) before the Society of Investigators of Military Science by Mr. V. N. Okunev on infectious diseases in war and the struggle with them he said, *inter alia*, that the present theatre of war was an especially dangerous one. Inkow, for example, was recognised by various authorities as a plague centre. It raged there with varying intensity, and there were other such centres in Mongolia and Korea. In the Amur district cholera was common whilst in Korea small-pox might be called permanent. And of course besides the diseases named there were typhus fever and dysentery to fear. The wells in these countries were a difficult question as they had not been examined and might

therefore be dangerous. Filters not being always trustworthy he recommended boiling the water. The lecturer did not conclude without a warning against the careless use of preserved foods.

THE ARMY JOURNAL OF THE BRITISH EMPIRE.

The proposal to issue a new military journal under War Office auspices, which has been set forth by direction of the Army Council in a special Army Order, has given rise to a good deal of comment but the idea strikes us as being a good one and well worthy of trial. Other nations—France and Germany, for example—possess official journals of the kind. The design of the publication is a bold and broad one—namely, to deal with subjects of a professional and scientific nature, to encourage the study of military science and history, and to circulate information likely to promote a knowledge of the principles of imperial defence amongst all ranks and all arms of the military forces of the Crown. Whilst upon this subject we may say that the numbers of the *Journal of the Royal Army Medical Corps* for March and April show that the journal is growing in scientific and general interest.

THE WAR IN THE FAR EAST.

Press reports state that many of the Japanese troops in Korea are suffering from symptoms resembling those of beriberi. This disease has long been known to exist along the south-eastern coasts of Asia and in Japan. In THE LANCET of May 2nd, 1896, p. 1238, we gave some account of an outbreak which occurred in the year 1894 in the Fiji Islands, all the patients being Japanese labourers of whom about 300 were imported for the purpose of working on sugar plantations. The Japanese known to be attacked were 268 in number, of whom 65 died, and in February, 1895, the whole of the survivors were sent back to Japan. The disease was entirely confined to these immigrants, not spreading either to the native Fijians or to the imported Indian labourers. The medical officers of the Japanese army will no doubt do everything that may be possible to arrest the disease in the present circumstances.

THE ROYAL NAVY LIST.

The April issue of the "Royal Navy List," which is published by Messrs. Witherby and Co., 326, High Holborn, London, W.C., contains appointments, promotions, retirements, and such like details bearing date as late as March 26th and in the admirable "Current History of the Royal Navy," a comparatively new feature of the List, we notice that there is a reference to the lamentable accident to the submarine A 1. The war and meritorious services of officers of the Royal Navy, Royal Marines, and Royal Naval Reserve are arranged in a manner which admits of easy reference, not a small matter when it is remembered that the names of some 10,000 officers are dealt with. The book is full of information on all matters connected with our first line of defence.

MILITARY MEDICAL INTELLIGENCE.

While the Army Medical Service may not be disposed to regard with any favour the position recommended to be assigned to it in future by Lord Esher's Reconstruction Committee the proposal to attach an officer of the Royal Army Medical Corps, who will travel when necessary, to the section of the Director of Military Operations which deals with intelligence will be recognised by all as a necessary and valuable recommendation.

DEATHS IN THE SERVICES.

Surgeon-Colonel George Cochés Chesnaye, I.M.S. (retired), at his residence at Bournemouth in his 67th year. He entered the service in 1859.

LITERARY INTELLIGENCE.—A treatise by Dr. R. R. Rentoul, entitled "Trachoma (Granular Conjunctivis)" has just been issued by Messrs. Cornish and Sons, Lord-street, Liverpool.

THE ROYAL BRITISH NURSES' ASSOCIATION.—The fifteenth conversazione of this association will be held at the Portman Rooms, Baker-street, London, W., on Tuesday, April 26th, at 8 P.M. Princess Christian has signified her intention to be present. The band of the Grenadier Guards will play a selection of music. Tickets—members, 2*s.*; nurses (non-members), 2*s.* 6*d.*; guests, 5*s.*—can be obtained from the secretary, 10, Orchard-street, London, W.

Correspondence.

"Audi alteram partem."

THE USE OF HOT BOTTLES AFTER SURGICAL OPERATIONS.

To the Editors of THE LANCET.

SIRS,—I should like to call attention to a matter in connexion with the nursing of surgical cases which is of the highest importance. In directions to nurses, especially in laparotomies, a great point is made after the operation of packing the patient with hot bottles. No statement of the temperature of the hot water in the bottles is vouchsafed and in the absence of such grave risks are run. Bottles filled with water practically at the boiling point are placed in close contiguity to a semi-conscious patient and even the ordinary covering of a blanket may not suffice to protect the skin. The danger has been very forcibly brought home to me lately and inquiries amongst professional friends have resulted in my hearing of 17 cases of burns which have recently occurred from the practice. I thus feel sure that surgeons ought to be a great deal more explicit in their instructions regarding this detail of the treatment of their patients.

I am, Sirs, yours faithfully,

Oxford, April 18th, 1904. H. P. SYMONDS.

THE "N" RAYS AS A PROOF OF DEATH.

To the Editors of THE LANCET.

SIRS,—With reference to Dr. John Munro's letter suggesting that the absence of "n" rays might be used as a proof of death, allow me to point out that it seems advisable at present to draw a distinction between the rays under investigation by Blondlot and those discovered by Charpentier. The former are of interest to the physicist, being generated by the sun, Nernst electric lamps, steel under tension, &c.; while the latter, proceeding from living muscle and nerve under strain, are of physiological importance. I have experimented with muscle rays only and it is because their objective existence has lately been the subject of entirely negative experiments at Glasgow and elsewhere that I am asking you kindly to afford me space for this letter.

In order that the existence of muscle rays may be made evident in the most convincing manner the following conditions must be present:—1. A powerful generator of the rays. Presumably this will be a muscular man or animal. 2. A fluorescent screen the luminosity of which will increase and die away rapidly, so that the connexion between cause and effect can be easily noted. 3. A good receiver—i.e., vision naturally capable of detecting a small change of luminosity—used under conditions which render it as sensitive as possible. The common cause of bewildering results is the natural tendency of everyone to involuntarily open the eyes wider when expecting to see an increase which may not be forthcoming and therefore to interpolate false answers amongst real ones. I have by practice acquired some expertness in observation and shall be most pleased to give a demonstration of the objective existence of the rays to anyone who has failed in his experiments. I will ask him to bring up his hand and stretch the muscles of the wrist at uncertain intervals in a completely dark room behind a cardboard screen, made of two large sheets each one-sixteenth of an inch thick and separated by three-sixteenths of an inch air space. On the face of this the luminous disc will be fixed, and by observing it from a few feet in front I will undertake to tell him when he brings his hand up. If convinced there is no delusion about the matter I think the medical profession will take the investigation and application of "n" ray phenomena seriously in hand.

I am, Sirs, yours faithfully,

Hatton-garden, E.C., April 18th, 1904. LESLIE MILLER.

P.S.—Since writing last night I have heard from someone who was present at Blondlot's demonstration of "n" rays before the French Physical Society on April 15th that he was able to show the effect of a coiled-up watch-spring and a stropped razor—i.e., metals under tension—as sources of the rays. I have just repeated this experiment with a powerful clock-spring, held in the jaws of a test-tube holder and waved behind my cardboard screen. The effect is more

evident than with strained muscles. The luminous strip unmistakeably brightens up even when the clock-spring is still some inches from it with the two thicknesses of card between. Professor Blondlot appears to have given a convincing demonstration.—L. M.

THE INTERNATIONAL CONGRESS OF SCHOOL HYGIENE.

To the Editors of THE LANCET.

SIRS,—In a note from your Berlin correspondent in THE LANCET of April 16th, p. 1086, I notice an announcement that the next International Congress of School Hygiene will be held in London under my presidency. Like all others interested in the subject, I am glad that the Congress has accepted the invitation to hold its next meeting in London in the first week of August, 1907, but although I have been appointed president of the International Committee the arrangements for the next meeting have been left very much in the hands of the English Committee and we hope to secure as president of the Congress at its next meeting some one of such position that even headmasters of public schools may be ready to work under him. The French delegates to the Congress, whilst expressing to me their regret that the next meeting should not have taken place in Paris, and whilst inviting the Congress to meet in Paris in 1910, have in the most courteous and kindly manner declared that they will do everything in their power to make the London meeting a success. The object of the Congress is one of vital importance, and I am sure that the English will collaborate not only with their French colleagues but with those from every country to render the next meeting in London a success, in forming bonds of friendship between the teachers of all lands, as well as forwarding the other objects for which the Congress has been established. I am, Sirs, yours faithfully,

Stratford-place, W., April 20th, 1904. LAUDER BRUNTON.

ON SYPHONAGE IN THE LARGE INTESTINE.

To the Editors of THE LANCET.

SIRS,—I am glad to find that Dr. A. Keith has examined my book and I must ask others interested in the subject to do the same before passing judgment on my views, for I cannot quite accept my critic's exposition of them and the space I can occupy here is insufficient to do them justice. 1. I think no one can deny that the large intestine with its short ascending limb and its long descending limb is (given the necessary rigidity of its walls) structurally a syphon and I proved it to be so with rubber tubing bent to reproduce its flexures. With glass I was hampered by the limitations of the glass bender and I had to be content with equivalent, instead of identical, curves. But I did more, I imitated the V colon and found, as I expected, that as long as its angle was higher than the outlet of the tube syphon action was unimpaired. As for the consistence of the contents, I do not claim syphon action unless these are "capable of flowing" (p. 41), but I succeeded perfectly well with thick treacle and other dense substances. 2. Dr. Keith is also mistaken in thinking that I claim that syphonage explains the peculiar course of the colon, for it is obvious that since syphonage cannot exist with the trunk horizontal, syphonic evolution could not have been a factor in producing this course. What I suggest is that man has only been able to maintain his existence in the erect posture because the colon happens to admit of syphonage. 3. I am not so foolish as to deny the existence of peristalsis in the human colon; all I affirm is that it is inadequate *per se* to effect propulsion of the contents of the ascending colon in the erect position. In animals it is not required to act in opposition to the force of gravitation. Further, I do not say that the arrangement of the muscular fibres is explained by syphonage but that it is consistent with it. 4. But the crux of the whole matter lies in the question, Is the resistance of the colon walls sufficient to counterbalance the intra abdominal pressure? It cannot be *proved* to be insufficient, because the human colon is never seen in its true taut condition. It is relaxed in the mortuary by death and on the operating table by anæsthetics, or, if these are not employed, by shock. On the other hand, although I cannot *prove* the resistance to be sufficient I can bring forward much evidence in support of it. For instance, the daily morning evacuation is due to the resumption of the erect position in which alone syphonage is possible. If it were due to peristalsis it would follow the heaviest, or perhaps each, meal in the day. Morning diarrhœa is explained in the same way as is also the curious fact pointed out by Brunton that a morning saline will not act satisfactorily if the patient gets back into bed again. Syphonage is necessarily followed by a partial vacuum in the cæcum since the latter is emptied much more rapidly than it can be refilled. This explains the frequency with which the cæcum is found nearly empty (under peristalsis it would be fuller than any other part of the bowel) and it also explains the occurrence of ileo-cæcal intussusception.

Dr. Keith says that he cannot conceive how contraction of the tæniæ can increase rigidity except by shortening. It does so, as I explained, by the deepening and doubling in of the internal inter-saccular ridges. In the case of a transverse colon which measured *in situ* only ten inches, but which, when drawn out, measured 20 I found that each ridge projected inwards for half an inch, while its thickness, of course, was double that of the colon walls. The effect of this in preventing collapse must be very great and it is aided by the fulness of the circular blood vessels and by the stiff tæniæ themselves which act like bridges from one full part of the bowel to another full part. Altogether I think it must be admitted that even the evidence given above points to the existence in life of sufficient rigidity to admit of syphonage. If more is required it will be found in the book.

I am, Sirs, yours faithfully,

April 16th, 1904. R. W. LEFTWICH.

THE EVIDENCE FOR THE HETEROGENETIC ORIGIN OF BACTERIA.

To the Editors of THE LANCET

SIRS,—In what purports to be a review of my "Studies in Heterogenesis" in THE LANCET of April 16th, p. 1060, the writer tells your readers nothing as to the actual contents of my work, though he gives them very false notions as to its purport and as to the methods pursued in regard to the particular questions to which he refers. He attributes to me conclusions "which, if rightly established, must," he says, "of necessity cause the whole fabric of bacteriology, infection, and hygiene to fall upon, and to annihilate, the multitude of investigators who have helped to build upon the foundations laid by Pasteur and to cause the name of Pasteur himself to be erased from the roll of fame." This seems to me utter nonsense and as unjustifiable as it is nonsensical. Let your reviewer quote anything he can from my book which would in the least justify what he says. The above surprising statements are followed by this further remark: "To review this elaborate book at length would be but to attempt to fight over again the battle ably fought, and we believe won, by Darwin, Pasteur, and their disciples." I never knew that Darwin had ever written a line on bacteria or heterogenesis, and on consulting the very full index to the sixth edition of "The Origin of Species" my impression was confirmed. Neither of these words are to be found therein. Yet your reviewer says his work in this direction "is, or ought to be, a matter of common knowledge."

A little further on this very unscrupulous and careless writing is followed by a statement directly untrue in its bearing upon my Section XXIII. on "The Origin of Bacteria and their Allies by Heterogenesis." He says: "The antiquated methods which still find favour in attempts to re-establish the *de novo* origin and interchangeability of lowly forms of life find no place in modern bacteriological technique." But the work which I have recorded in the section indicated, dealing with the origin of these organisms, was conducted almost throughout under strict antiseptic precautions. I trust, therefore, that you will permit me to make two quotations from that section in order to show, what your reviewer has not done, the kind of evidence adduced, and to correct the very erroneous impression which he has disseminated.

As an illustration of the appearance of one of the bacterial allies within closed vegetable cells, which the doctrines of the day declare to be germless, I would cite (from p. 301) the following experiment. "A small new potato, after careful washing, was placed in a small tin with a very

tightly fitting cover and allowed to soak in 10 per cent. formalin for 20 minutes, the fluid having been shaken about several times so as thoroughly to wet the whole internal surface of the tin. The fluid was then poured off, leaving the surfaces wet with the solution as before; the tin cover was very tightly jammed down, and the vessel was placed within a copper incubator at a temperature of 75° F., and allowed to remain there for eight weeks. ..... When taken out and examined the cut surface of this potato presented just the same characters as in the others; the whole substance was firm throughout, there was no shrinking, and the central portion was rather darker than the other parts which showed the usual mottling. ..... On microscopical examination a large number of the cells scattered throughout the sections were found to show the most delicate branching tufts of a new kind of microphyte, probably a species of *Cladothrix*, which had taken the stain slightly, and such as are shown in Fig. 196 (× 500). These tufts were mostly seen to be sprouting from the external surface of the primordial utricle, where it had shrunk away from the cell wall. No Bacteria and no ordinary mycelia were found in either of the sections, though they were most carefully examined."

This may be taken as typical of many other experiments recorded in this section in which either bacteria or one or other of their allies were found within closed vegetable cells in the central portions of tubers or fruits. It is true that, according to Pasteur, the cells of healthy plants are free from any such micro-organisms. He has distinctly affirmed this on several occasions, and microscopical examination of them in their fresh state has convinced me of the truth of this proposition. Thus, whilst agreeing with Pasteur as to the germless condition of the healthy vegetable cell, I have gone further and have shown what may occur in such cells when they have been long kept under unnatural conditions. Now, what view does your reviewer wish to take in regard to these facts? Is he prepared to help to erase the name of Pasteur "from the roll of fame"? Has he independent evidence to show that Pasteur was wrong? and if not, How does he account for the appearance of these organisms within multitudes of the closed vegetable cells in the central parts of the tubers or fruits? The antiseptic has been proved to be adequate, since no organisms have ever appeared upon the surface or in the superficial layers of cells. Then, again, he cannot say the organisms were not there and that I must have been mistaken. The photographs afford an effectual check to that kind of statement.

I should like also to cite another observation, often repeated, which even in the absence of antiseptic precautions (here impossible) seems to me to be of a very convincing nature. At p. 337 I have pointed out the fact that the minute spines on the abdominal appendages of a Cyclops show nothing within but structureless protoplasm having a glass-like appearance, and I have described the very simple conditions under which, on the death of the animal, we may see minute *motionless* specks gradually appear within this structureless matrix. The description continues thus: "Still later we may see some of these specks growing into bacteria, as in Fig. 200, B (× 700), which is a representation of A after four days. At last the whole interior of the spine becomes filled with distinct Bacteria, as may be seen in C (× 700)." Of course it is easy for a person absolutely convinced that living units cannot arise *de novo* at the present day (whatever he may believe in regard to a far remote past) to attempt to explain away the cogency of such observations. But how does he do it? Only by postulating one or other assumption, not only unsupported by evidence but actually at variance with existing knowledge. He will ask you to believe that the tissues of this little animal are absolutely pervaded in their remotest parts by *invisible* germs of bacteria, even though he is aware that all known bacterial germs are readily visible under a power of 700 diameters, and if present would have been readily recognisable in the healthy spine when the observation was commenced. Or he will wish you to believe that these minute germs, though devoid of all signs of motility, have yet been able to get from the drop of distilled water through the chitinous envelope of the spine. Surely such reliance upon utterly unsupported hypotheses is, from the point of view of science, altogether immoral.

I do not attempt to say anything concerning other evidences of heterogenesis dealt with in this work, as undoubtedly the question of the origin of bacteria and their allies is that portion of the subject which has the most important bearings upon medical science. I must, however, thoroughly repudiate what is said in conclusion by your reviewer when he speaks of the work as "the best possible statement of the case against the claims of modern bacteriology and unicellular biology." I have said absolutely nothing tending to minimise the enormous value of bacteriological work, and I defy your reviewer to quote anything to that effect.

I am, Sirs, yours faithfully,

Manchester-square, April 17th, 1904. H. CHARLTON BASTIAN.

*** Dr. Charlton Bastian is wrong in using the adjectives "unscrupulous," "careless," "unjustifiable," "nonsensical," and "untrue" because our reviewer does not hold the views enunciated in his book. That an index to one of Darwin's books does not include the words "bacteria" or "heterogenesis" leaves unchanged the fact that Darwin's teaching generally is at absolute variance with Dr. Bastian's theories—and this is all that our article indicated. In reviewing Dr. Bastian's book we showed him, as a member of the medical profession distinguished in other fields of inquiry, a consideration which certain British and foreign learned societies have refused to extend towards the views that he expounds. Our courtesy has been entirely misconstrued.—ED. L.

REMARKABLE RESUSCITATIONS.

To the Editors of THE LANCET

SIRS,—In your interesting leading article on Remarkable Resuscitations in THE LANCET of April 9th, p. 1005, you touch upon the possibility of premature burial. Some years ago I investigated this subject and came to the conclusion that although premature, or live, burial was not impossible yet that, on the other hand, in no single instance could I discover conclusive evidence that premature burial had taken place. Tales there are in plenty of terrible tragedies among the tombs but I failed to find one that would satisfy the ordinary proofs required, say, in a court of law. This investigation I published in the form of a small book entitled "Premature Burial. Fact or Fiction" (Baillière). I venture to call your attention to this fact, which has apparently escaped the notice of your leader writer as he makes no mention of this English book, although continental authorities are quoted.

I may add that one case of premature burial which was reported from America and widely quoted by the alarmists in the United Kingdom was condemned as a fable in my book on internal evidence alone. Some time afterwards an American medical man journeyed to the place where the incident was reported to have taken place and from inquiries entirely confirmed my view of the case.

I am, Sirs, yours faithfully,

Hanover-street, W., April 12th, 1904. D. WALSH.

THE METHODS OF ANTIVIVISECTIONISTS.

To the Editors of THE LANCET.

SIRS,—In reply to Dr. Murrell's letter in your issue of April 2nd it is only fair to him to say that he is quite correct in stating that he was an unintentional contributor to the book to which he refers. Let me add that this point was made clear in the book itself. It is there stated—first, that Dr. Murrell is unconnected with the London Antivivisection Society; secondly, that the article in question was copied from an American periodical; and thirdly, that "this article was not written by Dr. Murrell for this book."

I am, Sirs, yours faithfully,

SIDNEY TRIST, Secretary.

The London Antivivisection Society, Regent-street, S.W., April 14th, 1904.

*** The accuracy of Dr. Murrell's statement required no endorsement from the secretary of the London Antivivisection Society. To some people an explanation might seem due to Dr. Murrell, and to the editors who had previously published Dr. Murrell's work, for the annexation of that work, but our experience is that in matters of courtesy the antivivisection propagandist is a law to himself.—ED. L.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Dufferin Fund.—The Increasing Plague Mortality.—The Character of the Volunteer Force in India.—An Enterprising Nursing Association.—The Report of the Army Sanitary Commissioners.

THE report of the Dufferin Fund for 1902 recently issued gives a record of useful work. Of the women engaged 41 hold qualifications of the United Kingdom, 78 are classed as of the second grade, being trained and holding qualifications obtained in India, and 256 act as hospital assistants. In addition there are more or less trained midwives working under the association. The subcommittee appointed has recommended that the Government should raise the standard of female medical education in the medical schools and that all lady doctors should undergo practical training in a special women's hospital before obtaining their degrees. At the present time there are 114 Eurasian and native ladies being trained as assistant surgeons and 95 as hospital assistants, besides 281 as nurses, dais, and compounders. Up-to-date operating tables have been provided for several centres, notably Lucknow, Rangoon, Lahore, Agra, Benares, and Allahabad. The total number of women and children treated in the zenana hospitals, wards, and dispensaries throughout the country during the year was 1,792,000 which, it appears, was only a very slight increase over that of the previous years.

The plague epidemic is assuming alarming proportions. For the week ending March 19th there were 40 527 deaths from plague. This is an increase of nearly 7000 over the previous week as against 29,236 for the corresponding week of 1903. The local figures are important. In the Punjab there were 10,174 deaths as against 6431 in the previous seven days; in the United Provinces, 8427, as against 8504; in the Bombay Presidency, 7687, as against 7140; in Bengal, 4797, as against 4386; in the Central Provinces, 2804, as against 2290; in Central India, 1640, as against 955; in Rajputana, 1033, as against 621; in Kashmir, 526, as against 405; in Bombay city, 849, as against 925; and in Calcutta, 295, as against 230. In the last case later returns show 474 deaths for the week ending March 26th. The increase of plague is general throughout India, but it is curious to note that while in the Bombay districts plague seems to continue virulent all the year round, in the North-western districts it dies away in June and July to reappear a few months later in each year. There is no hiding the fact that plague is now worse in India than ever it has been.

A recent inspection of volunteers by Lord Kitchener called forth the opinion from him that every Englishman by birth or descent should be a volunteer. It is to be hoped that under his ruling some improvement in the physique as well as in the status of the force will be brought about. The Government and the military forces have hitherto shown very little interest in volunteer movements. It is generally forgotten that by the Army Regulations the force should be a European one. This has not been adhered to. It is not very long ago that nearly every European in the Hyderabad (Sind) corps resigned and that the inspector general drew attention to the fact that some corps, especially the Allahabad and Poona Rifles, had ceased to be European in character. It does not appear that the Government has taken any action in this matter, but while so much attention is bestowed on the native troops and the permitted contingents of the native States very little is done for the volunteers. I had occasion to draw attention to the physique of those picked corps which attended the Delhi Durbar but the ordinary ranks of most corps are lamentable.

The first annual report of the Bengal-Nagpur Railway Nursing Association shows what can be done by an enterprising organisation. A bungalow was transformed into a hospital, a qualified nursing sister and nurse from England were appointed, and patients from the different sections of the line were received. The whole scheme is now being worked on a commercial basis and furnishes an organised medical and nursing staff for the whole of the employés. The Europeans in isolated stations must feel great comfort in having such assistance available.

It would be a service to draw the attention of Members of Parliament to the absurdity of issuing the report on the sanitary measures in India for the year 1901 towards the end of 1903. This annual report of the army sanitary commissioners is not only belated but is merely an abstract of other reports issued long before. Nearly all the information given is contained in the report of the sanitary commissioner with the Government of India and the added memoranda of the army commissioners merely repeat what is given in the early pages of the same report. The report when issued is practically two and a half years old.

March 31st.

CHOLERA IN MESOPOTAMIA AND PERSIA.

(FROM THE BRITISH DELEGATE TO THE OTTOMAN BOARD OF HEALTH.)

THE cholera outbreak at Bagdad is declining, if it has not indeed come to an end; that at Basra, on the other hand, is increasing and the disease has recently crossed the Turco-Persian frontier and appeared on Persian territory. The following are the returns for Basra since the date of my last letter (THE LANCET, March 26th, p. 897):—

From March	13th	to	19th	...	25 cases	...	27 deaths.
,, ,,	20th	,,	26th	...	21 ,,	...	20 ,,
,, ,,	27th	,,	31st	...	36 ,,	...	36 ,,
,, April	1st	,,	10th	...	37 ,,	...	28 ,,

A considerable number of cases continue to be hidden from the authorities during life and only come to their knowledge after death. Thus in the above four periods the numbers of cases returned as "trouvés morts" were respectively 13, 8, 24, and 13.

At Bagdad the following are the weekly returns of cholera cases and deaths since the reappearance of the disease there on March 7th:—

On March	7th	...	...	...	...	2 cases	.....	0 deaths
From March	8th	to	March	13th	19	,,	.....	11 ,,
,, ,,	14th	,,		20th	16	,,	.....	15 ,,
,, ,,	21st	,,		27th	9	,,	.....	4 ,,
,, ,,	28th	to	April	3rd	... 6	,,	.....	13 ,,
On April	6th	...	...	...	...	1	,, ...	0 ,,

The case reported on April 6th is the only one which has been observed in Bagdad between April 3rd and 12th and it is therefore hoped that the disease may really have died out there.

On April 5th it was reported that cholera had appeared at Kermanshah, on the Persian side of the Turco-Persian frontier. On the 9th it was stated that six cases and four deaths had occurred up to that date. No further details have yet been received but the fact that the infection has crossed the frontier and entered Persia is a regrettable one. On several occasions during the last few months there have been rumours that cholera had reached the important town of Meshed in Northern Persia but the rumours have not been confirmed and were probably not true. But should the disease spread from Kermanshah through Persia and ultimately reach Meshed the danger would arise of its passing thence across the Perso-Russian frontier and spreading by the Transcaspian Railway eastwards to Siberia and westwards to European Russia, as it did in 1892.

Constantinople, April 15th.

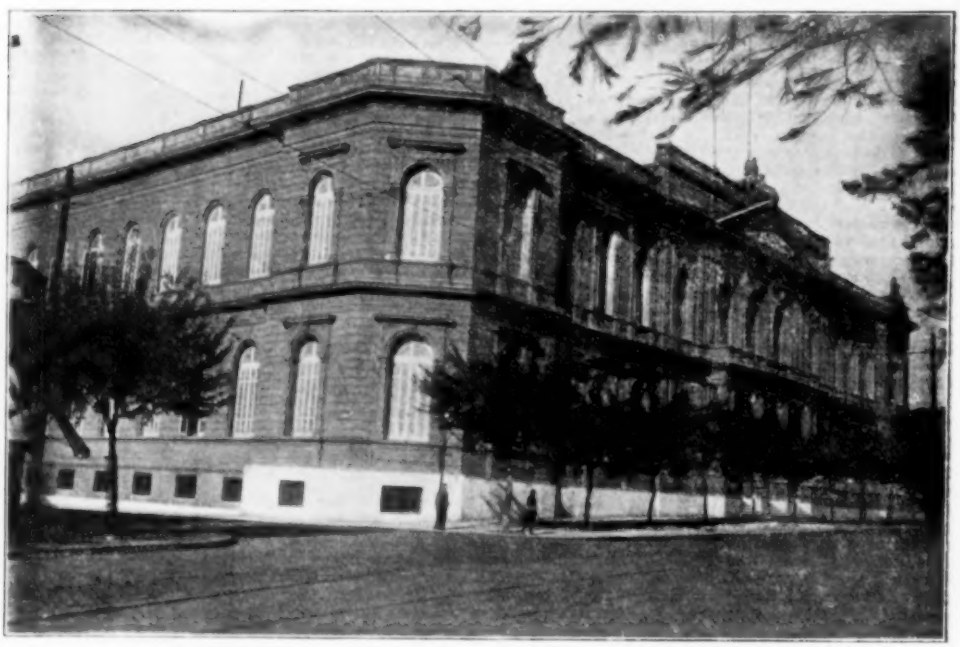
LATIN-AMERICAN CONGRESS OF MEDICINE AND HYGIENE.

IN THE LANCET of Jan. 23rd we gave a preliminary account from the pen of our special correspondent, mainly as regards the medical side, of the Latin-American Congress of Medicine and Hygiene which is still, so far as the hygienic section is concerned, in progress at Buenos Ayres. The Congress opened on April 3rd and the medical portion of it closed on April 10th, but the exhibition of hygiene which opened at the same time as the medical portion remains "in being" until May 30th. We have now before us the official programme of the hygienic exhibition of which Dr. Emilio R. Coni is the president and Dr. Samuele Gache is the secretary. The architect is Virgilio Cesari. The principal building in which the exhibition is housed is the Pabellon Argentino of which we give a

FIG. 1.

The Pabellon Argentino.

FIG. 2.



The Faculty of Medicine where the medical portion of the Congress met.

FIG. 3.

The San Roque Hospital.

FIG. 4.

Interior of the San Roque Hospital.

view (Fig. 1). This building includes a floor space of 1267 square metres and has been, as will be seen, erected in a somewhat ornate style. In addition to this the principal building are five others comprising 1452 square metres of floor space. One of these is allotted to military hygiene and sanitation, another to the municipality of Buenos Ayres for an exhibition of apparatus and the like concerning public health, and another is devoted to an exhibit from Uruguay and Chile.

The exhibition is divided into 15 sections which are as follows:—Section 1: Instruments and apparatus for hygienic investigation and demonstration, such as apparatus for the analysis of air, soils, water, drinks other than water, and foods. There is also an exhibit of apparatus for the study of ventilation, the humidity of walls, photometric instruments and bacteriology, chemistry, and physiology in so far as these apply to hygiene. Section 2 is devoted to sanitary statistics and demography; Section 3 deals with the all-important question of water-supply; and Section 4 with the no less important question of drainage, sewage, and the like. Section 5, a very comprehensive section, has for its subject the hygiene of the dwelling and hence includes drainage, lighting, warming, ventilation, and many other matters. Section 6 deals with the hygiene of streets, Section 7 with baths and washhouses, Section 8 with clothing, Section 9 with food and drink, both fresh and preserved, and Section 10 is concerned with infant life protection. Section 11 deals with the question of the sick and wounded, including removal of infectious cases and hospital hygiene, and Section 12 is devoted to epidemiology and the prophylaxis of transmissible diseases. Here will be exhibited bacteriological apparatus, serum therapeutics, disinfecting apparatus, and much other cognate material. Section 13 deals with the disposal of the dead; Section 14 with the hygiene of barbers' shops; and, finally, Section 15 is allotted to industrial and professional hygiene.

Many firms have applied for space for exhibits, but only five or possibly six seem to be British. The exhibition should be of great interest if the actual exhibits carry out the programme in anything like its entirety and Buenos Ayres is certainly a well-ordered city from a hygienic point of view.

Our other illustrations show the Faculty of Medicine where the Medical Congress sat, the interior and exterior of the San Roque Hospital, and the isolation hospital. San Roque or Roche was one of the saints who was specially invoked against the plague, the others being the Blessed Virgin, St. Antony, and St. Sebastian, so it is natural that a hospital should be dedicated to him. San Roque was a specialist; the other medical saints, who were of the consulting physician type, were St. Cosmas and St. Damian, and St. Pantelemon.

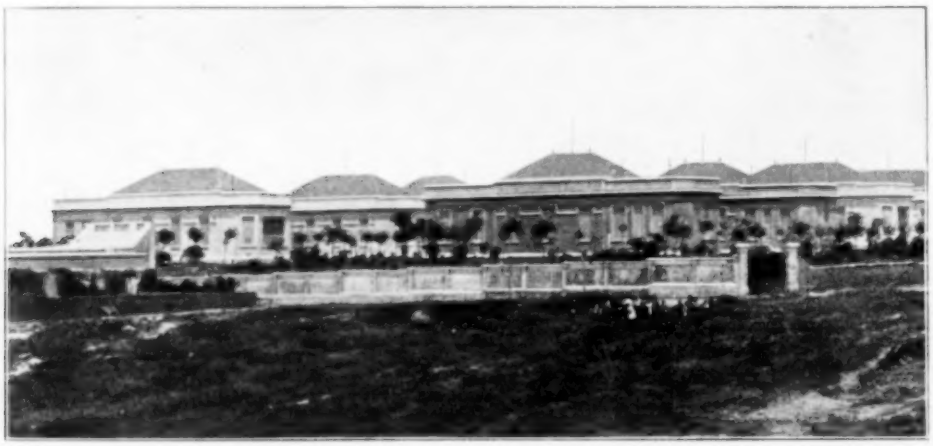
THE FIRST INTERNATIONAL CONGRESS OF SCHOOL HYGIENE.

(FROM OUR SPECIAL CORRESPONDENT.)

THE SECTIONAL MEETINGS.

THE meetings of the Congress were arranged in seven sections and dealt with the following subjects: Group A, School Buildings and the Furnishing of the School Room; Group B, the Hygiene of Residential Schools, the Methods of Hygienic Investigation and Research in Schools, and the Physiology and Psychology of Educational Methods and Work; Group C, Instruction in Hygiene for Teachers and Scholars; Group D, Physical Education and Training in Personal Hygiene; Group E, Contagious Diseases, Ill-health, and Conditions affecting Attendance; Group F, Special Schools, including Feeble-minded, Blind, Deaf, Dumb, Cripple, Invalid, and Exceptional Children; and Group G, Out of School Hygiene, Holidays, Camps, and Schools; the Relations of the Home and School and the Hygiene of the Teaching Profession.

FIG. 5.



The Buenos Ayres Isolation Hospital for Infectious Diseases.

The sectional meetings of Congress held at Nuremberg took place in the Royal Industrial School—a building admirably adapted for the meeting of such a congress as it supplied a sufficient number of rooms for the various sections and accommodation also for the museum. Nothing but praise can be given for the general administration of the Congress. There was no undue delay in obtaining all information required and the daily publications. The one noticeable defect in the sectional meetings of the Congress was the ventilation of the rooms. The school building is perfectly new, is warmed and ventilated on the most modern principle, and yet without the rooms being unduly crowded the atmosphere was such that it became in some rooms unbearable. In other rooms in which the chairman and others did not object to an open window the atmosphere was better, but even that did not efficiently ventilate the room. It is also to be regretted that the chairmen in the various sections exercised so little control over the length of time allotted to the reader of a paper and it not infrequently happened that the time limit was exceeded by ten or 15 minutes, the result being that many papers were crowded out. It may be said, however, that all the sections were well attended. Many of the papers read were fully discussed and criticised. The papers generally were of interest, some of practical value and others only of academic interest, and were discussed not only by medical men but also by schoolmasters

Dr. LIEBERMANN (Budapest) spoke on the Duties and Education of the School Medical Officers. He said that the scholar of the higher classes needed as much medical supervision as did the children in the elementary schools and in this respect no difference should be made between the lower grade or higher grade schools. The school was not a sanatorium but an institution for the development of knowledge and it was the duty of the school to see that this knowledge was not acquired at the expense of health. There was, however, no doubt that attendance at school was accompanied by dangers just as dangers accompanied the workmen in the factory. And as the manufacturer was obliged by every possible means to provide against accident, so it was the duty of the school authorities to prevent as far as possible the spread of disease in school. This duty had been greater since attendance at school was now compulsory. He considered, however, that it was the duty of the school not only to guard the pupils against disease but to teach the pupils the necessity of hygiene and this was far more important than a great deal of book work. If hygiene were taught in schools it was carried into family and home life and benefit resulted to the community at large. Opportunity should be taken to warn the scholar against immorality and excess. It was the duty of the medical officer to examine a scholar when admitted into school, but the systematic weighing and measuring of the scholars, although it might be of statistical value, was not the duty of the school. He stated that in Hungary every practitioner before he could become a school medical officer must undergo a special course of hygiene. When school hygiene was carried out in this way then it would become an educational method of the greatest value.

Professor HUEPPE (Prague) read a paper on the Prevention of Infectious Disease in Schools. In all infectious diseases the predisposition was of first importance. The presence of this predisposition was the origin of all infection and therefore it was of the greatest importance to increase the power of resistance. The younger the individual the greater the liability to infection. As soon as any symptoms were noticed everything should be done to prevent the spread of infection. This was one of the most important duties of the school medical officer. A child who had a suspicious illness must be excluded from school and if required the whole class must be closed. The home conditions of the child should be inquired into, since it often happened that the disease was carried from the home to the school. The insanitary dwellings of the poorer classes had much to do with the spread of infection. If cholera, dysentery, or typhoid fever was proved to be acquired in the school then it was certain that some marked defect in the hygiene of the drains, closets, or water-supply was present. The most powerful weapon against infectious diseases was cleanliness. The infectious disease of school life might be divided into three groups, the most important of which, measles and whooping-cough, might be considered typical school infections. Mumps and chicken-pox were placed in the second group. In the third group came diphtheria and scarlet fever. The last two, although dangerous diseases, were from the school point of view of less importance than the diseases of the first two groups. Small-pox might be disregarded, since vaccination had made it almost extinct. With regard to measles and whooping-cough, the susceptibility and disposition of the individual were of greater importance than the infection and those diseases were infectious at a time when the symptoms were hardly recognisable. Owing to the sudden outbreaks of measles and whooping-cough it was important that the classes should not contain more than 40 or at the most 50 children. Closure of schools and isolation were most important in these diseases. Mumps and chicken-pox were easily combated by isolation. In tuberculous infections the most important factor was the power of resistance of the individual; it was therefore the duty of the school by strengthening the body to increase the power of resistance. The school had not only to deal with the development of the mind but also with the whole development of the man. The speaker advocated that children should be sent to holiday camps by the sea and elsewhere and he thought that in this way the number of cases of pulmonary infection would become less.

Dr. G. E. SHUTTLEWORTH (London) read a paper on the Educational Treatment of Epileptic Children in Great Britain. He said that up to the present time the education of epileptic children had been undertaken by private enterprise and little had been done by the Government, although the Act of Parliament of 1899 provided for the elementary education of defective and epileptic children. He had examined some 470 cases of epileptic children and these he divided into four classes: (1) 17 per cent. were fit to continue in the normal school; (2) 27·5 per cent. were so far mentally impaired as to need separate instruction in the special classes for defective children; (3) 40 per cent. required to be cared for and taught in a residential institute for epileptics; and (4) 15·5 per cent. were unfit for any education and required only medical and nursing care. He calculated that accommodation was required for nearly 3000 epileptic children and that at the present time there was not accommodation for more than 200. He was of opinion that epilepsy was no disqualification for education but that the length of school hours should be reduced and that no hard-and-fast rule could be laid down for the education of epileptic children but that each case must be considered by the medical officer in charge.

Dr. CLEMENT DUKES (Rugby) read a paper on the Organisation of Physical Education. He said that the physical development of the body was of importance for the mental development and that an energetic manhood could only be obtained by a healthy boyhood. He was of opinion that school games were important for the education of the boy, that such games should be made compulsory on all boys, and just as times were arranged for work in school so there should be a definite arrangement of play. A boy who did not play became dull and apathetic and became unfitted for the struggle of life. He was not in favour of Swedish exercises except in certain instances. Excessive exercise was as bad as deficient exercise and tended to stunt the body. He pointed out how necessary it was for a boy to train for his games and he stated that most accidents during play happened at the beginning of a season when a boy returned from holidays and in an untrained condition took up some violent form of exercise. The boy was an active animal and it was important to give him active employment or he would almost certainly find some occupation which might not only be useless but even dangerous. For young children he considered carefully arranged physical exercises most important, but it was to be remembered that the staying power of the young child was very limited.

Dr. F. MAY DICKINSON BERRY (London) read a paper on the Physical Examination of 1580 Children from Elementary Schools, with Special Reference to the Prevalence of Albuminuria among them. The children examined were those who had gained scholarships given by the Technical Education Board of the London County Council to enable them to continue their education in higher grade schools. Each child before being allowed to take up the scholarship had to pass a medical examination. Tables of the average weight and height according to age of these children were shown and compared with similar tables from other countries. The London children compared favourably as regards height with all others; in weight they were slightly below both the Swedes and the Americans. The two points in the examination chiefly dwelt upon were (1) the large number of cases of slight lateral curvature of the spine (11 per cent. of the total number) which demonstrated the need for more gymnastic training and physical exercises than were at present to be had in our elementary schools; and (2) the occurrence of albuminuria in nearly 10 per cent. of the children examined. A considerable number of these were kept under observation for periods varying from one to five years. In more than half these cases the albuminuria had disappeared at the last examination; in many, however, it persisted at each examination and remained of a considerable amount. In no case was any deterioration in the general health recorded.

Mr. P. SIDNEY SPOKES (London) read a paper on the Care of Children's Teeth. He said that whilst it was important to insist upon the necessity of a good dentition it was equally urgent that the evils dependent upon the presence of diseased teeth should be recognised. Apart from the suffering caused by exposed pulps of teeth or abscesses at their roots there was the possibility of constitutional disturbance other than that brought about by prolonged pain. A septic state of the mouth might provide the material and absolute starting point of a general infection. Children were subject to many diseases which might be attributed to bad teeth. Many boards of guardians, and especially those in London districts, had, with the sanction of the Local Government Board, appointed dental surgeons during the past decade and he was sure that much good had resulted. The children in the public elementary schools were, however, left without conservative treatment and were in a much more neglected state than the Poor-law children. The only way to get

preventive treatment adopted was by means of properly appointed dental surgeons to the schools and under the new Education Act it was to be hoped that something might be done for these children. Mr. Spokes advised that children should receive instruction as to the importance of sound teeth and the necessity of taking care of them; that in all Poor-law schools dental treatment should be compulsory; that in board schools it should be at first optional and later obligatory and that in public and private boarding schools there should be compulsory inspection on arrival with reports to parents when necessary; and that for all scholars the use of a tooth-brush, at least once a day after the last meal, should be enforced.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Coloured Milk.

AT a recent meeting of the health committee of the city the medical officer of health made a report on the extent to which milk which was intended for sale in the west-end of Birmingham was coloured in order that really poor milk might appear to be of good quality. From sellers in this part of the city a number of samples have recently been obtained which, in addition to being diluted with water, were coloured. It may be mentioned that the district in question contains a large proportion of the better class residences within the city boundary. On a recent Sunday 33 samples were taken in Edgbaston and Harborne which are two of the best suburbs of the city. Of these samples no fewer than 18, or 55 per cent., were found to contain colouring matter. The report of the medical officer stated that there might be some reason for adding colouring matter to sweets of various kinds and to butter and cheese in order to make them more uniform and presentable, but in the case of milk such addition is entirely unnecessary and the main object of it was to deceive the customer. In most cases milk is stored in a basin or jug and when so stored it is not easy to detect the presence of colouring matter, but if coloured milk is put into a tumbler until the cream rises it will be noticed that the skimmed milk is of a somewhat brownish tinge instead of the ordinary bluish one. The health committee, after considering the report, instructed the medical officer of health to draw the attention of all milk sellers in the city to this objectionable system of mixing colouring matter with their milk and to inform them that the health committee was determined to take the strongest possible measures to put a stop to it.

Oysters and Typhoid Fever.

In his ninth annual report as medical officer of health of Erdington Dr. A. Bostock Hill draws attention to the fact that three out of 30 cases of typhoid fever which occurred during the year were undoubtedly due to the consumption of oysters and other shell-fish. His report states that one case was particularly interesting because it occurred in a man who had been recently operated upon for appendicitis. During his convalescence he was advised to eat oysters. He did so and within the period of incubation became attacked by well-marked typhoid fever. In another case a woman became infected a fortnight after eating oysters, whilst in a third case, that of a man, it was found that he had been eating mussels on many occasions just previous to the incubation period of the disease. There is no doubt, therefore, says the report, that it is a most urgent requirement at the present time that power should be given by legislation to protect oyster layings and shell-fish beds from the sewage pollution which occurs so largely in estuaries and other places. The danger of acquiring typhoid fever from shell-fish has been proved up to the hilt and it is to be hoped that the recommendation of the Royal Commission on this subject will bear fruit at an early date.

Foresters' Homes.

At the recent meeting of the delegates in connexion with the Foresters' Convalescent Home for the Midland Counties it was reported that more patients than ever had been admitted during the year, the total being 316, an advance of 22 upon last year. At the same time the cost per head for maintenance had been slightly reduced. The results so far as the patients were concerned were as follows: able to work 176, improved 18, much better 1, no better 2, relapses 4, expelled 1, and extensions 114. It was considered that the number of members able to work after leaving the home was very satisfactory. Some of the patients sent were not fit for the home and it was decided to urge the different lodges to exercise more care in this respect. It was also decided to shorten the period of extension except in cases considered urgent by the medical attendant.—The joint committee of Foresters and Odd Fellows appointed to consider a scheme for providing a sanatorium for consumptives reported that it had found a suitable site and buildings at Barnt Green, a place on the Lickey Hills, about ten miles from the city. The house, which is situated on three and a half acres of ground, had been built for a gentleman who suffered from consumption and who regained his health whilst residing there. To purchase the freehold and to furnish the house would cost £3000, of which £1000 would have to be paid in cash. The cost of maintenance would probably be from 25*s.* to 30*s.* per week per patient. In moving the adoption of this report the President, Mr J. H. Smith, reminded those present that 15 out of every 100 persons in this country died from consumption which attacked men in the prime of life. If submitted to the fresh-air cure in the early stages of the disease experience showed that from 80 to 90 per cent. of cases could be cured. When the treatment was followed in a sanatorium near the patient's home the chances of permanent cure were greater than if the patient went to the seaside. Several members expressed sympathy with the scheme, but some doubted whether the courts could afford another levy on the funds of their members. It was pointed out that similar schemes were being undertaken by county councils. The president replied that apart from what the county councils might do the friendly societies had enough consumptives amongst their own members to fill a sanatorium. He contended that it would be cheaper to cure a consumptive brother than to give him sick pay until he died and then to pay his funeral expenses. After a lengthy discussion a committee was appointed to confer with the representatives of other societies and to call a large meeting to consider the scheme further.

Medical Institute.

The annual report of this institution, which has recently been circulated, shows that the membership has been increased by 16 during the past year, the total now reaching 219. The number of books added during the year was 168, the total number of volumes upon the shelves being now 13,493.

Health of Aston Manor.

This large district has recently become a municipality and the report of the medical officer of health, Mr. F. H. May, is the first which has been submitted to the newly elected corporation. In the report the corporation is congratulated upon the good health of the district and its continued low death-rate. For the past year this was 14·8 per 1000 of the population, and this, although calculated for the first time on the gross deaths belonging to the borough, whether registered therein or not, was 1·2 below the average of the past ten years. Mr. May attributes this lessened death-rate in part to the low mortality from infantile diarrhœa, although he adds that the improved sanitary condition of the town has no doubt borne its share in reducing the mortality and particularly that arising from zymotic disease. The number of cases of scarlet fever notified exceeds that of the preceding year, a fact which is very disappointing considering that 65 per cent. of the known cases have been removed to hospital. There were 383 cases notified of which 19 died, as compared with 361 cases and 18 deaths during the preceding year. There was a diminution in the number of cases of diphtheria and of membranous croup. With respect to measles Mr. May states that 25 deaths were registered as occurring from this disease during the year, as compared with 24 in 1902 and 29 in 1901. All of these were in children under five years of age. He says that many cases of measles and some deaths could be avoided if parents took a more serious view of the disease. He alludes to the common mistake that all children must have measles sooner or later which exists, especially amongst the uneducated and poorer classes, and when a case occurs in their households, he says, they seem to disregard altogether the greater incidence of the fatality amongst those who contract it under five years of age, and often the other children of the house are deliberately exposed to infection. In his opinion, mothers would be better educated up to a sense of the danger and of their responsibilities in this respect by the visitations of a female health inspector to the homes of the poorer classes where measles is reported. The notification of

chicken-pox has not been required in Aston and Mr. May gives the following reasons for adopting this policy: (*a*) Only a small number of cases of chicken-pox are medically attended and therefore only a small number would be reported. Some slight cases of mild modified small-pox are less likely to be seen by a medical man than severe cases of chicken-pox. (*b*) The Infectious Disease (Notification) Act is a dual one but it is practically impossible to secure notification by members of the general public even if prosecutions were undertaken to enforce it. (*c*) School attendance officers notify many cases of chicken-pox which are medically unattended and doubtful cases which are under the charge of a medical man are usually brought under the notice of the health department without any compulsion. (*d*) Supposing that anything like complete notification could be secured it would be of little use unless every case were visited for purposes of verification either by the medical officer of health or some expert. (*e*) Such action on the part of the medical officer of health in supervising and checking the diagnoses of his medical brethren in the homes of their private patients, either with a consultation or independently, might lead to friction and has no legal justification, since the Local Government Board has decided that it is no part of the duty of a medical officer of health to verify notifications received by him unless there is any suspicion of *mala fides*. Moreover, by following such a course the onus of diagnosis is placed on the medical officer of health and the sanitary authority assumes a responsibility which does not belong to it.

April 19th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Lancashire Inebriates.

THE first reformatory of the Lancashire Inebriates Board was opened by Sir John T. Hibbert on April 14th. The board, constituted in 1899, represents the Lancashire County Council and all the county boroughs in the county except Oldham and consists of 44 members. The reformatory is near Whalley and the estate contains 326 acres. The contract for the building was £73,418. It is arranged in separate blocks round a quadrangle, with 12 separate "homes," each accommodating ten persons, with single and separate bedrooms. Women only are to be received at present. There is sufficient room on the site for the addition of a men's reformatory as soon as it is considered advisable. The intention is to employ the inmates at farm work and gardening and so far as possible to make the reformatory self-supporting. How much the 44 women will be able to do in this way is not very clear. The longest period of detention for women committed by the county and county borough justices is three years and there are now over 100 Lancashire women of this class in various reformatories outside the county. The director and medical officer of the reformatory is Dr. F. A. Gill who was formerly deputy medical officer at the Manchester prison and afterwards at Liverpool, while more recently he held a similar position in the Government Inebriates' Reformatory at Aylesbury. Dr. J. M. Rhodes of Manchester, in proposing a vote of thanks to Sir John Hibbert, said that nothing could be done with a drunkard unless detained for at least a year and he could not be got hold of in the present state of the law till he was practically hopeless. He thought the law should be so altered that the authorities could confine drunkards before their cases became chronic. Sir John Hibbert said there were 4,500,000 people in the county and last year alone 38,901 cases of drunkenness had come under the notice of the police, and these included 229 cases eligible for treatment in reformatories. The board had built first for women because their case was more urgent than that of the men. He spoke of the £160,000,000 spent annually in the United Kingdom on alcohol and said that "if rightly spent there would not be a poor man in the country." He hoped the reformatory would do something to reduce the evil that was eating into the vitals of our nation. Dr. R. W. Branthwaite, Home Office Inspector of Inebriate Homes, said that the first lot of cases received would be "practically irreformable." They had been drinking 15, 30, even 50 years, and were not to be reformed in three. But these cases must be "worked through" before the reformable ones were reached. "Because a case was not reformable they had no right to leave it about the streets." The simple facts brought forward at the meeting impress, and at the same time almost oppress, one with the magnitude of the evil done by alcohol, the misery it occasions, and the difficulty of preventing it so long as it is freely obtainable.

Are Town Dwellers Degenerating?

In a discussion rising out of a paper by Professor James Long descriptive of a colony of small holdings in Surrey, read to the Manchester Statistical Society on April 13th, Dr. J. Niven had something to say in favour of the town. He said that the statistics of this country for the last 50 years showed that "at the younger ages the death-rate had enormously improved and it was incredible to him that there had not been also an enormous improvement in physique," and that as so many crowded into the towns it was impossible to disbelieve that improvement was going on in the town population. Against the fresh air and sunshine of the country he set the high wages of the townsman, which enabled him to get wholesome and cheap food to an extent country people could not do. He had also a better house and better clothes. Some of these propositions will not be accepted unconditionally.

Bad Fish for Good Friday.

Although some people are said to prefer cod when it shines in the dark the majority believe that fresh fish is more wholesome and a pleasanter food than when it is stale. But some members of the Manchester city council seem to have doubts on the matter, for at the meeting on April 13th there was a long discussion as to whether or not one of the wholesale dealers in the fish market should be prosecuted for having offered for sale on Good Friday 371 pounds of unsound fish. A subcommittee had decided to prosecute but the markets committee reversed this decision, allowing the delinquent to apologise and to be the recipient of a "severe reprimand." The dealer explained that it was the fault of one of his men who opened a box of unsound fish and offered it for sale unknown to him. Slink meat and bad fish are known in most large towns and it is important that the municipal authorities should do all that can be done to protect the poor—for it is by the poor that such food is consumed—and not be diverted from their purpose by such letters as that in which the market tenant assured the committee that the offer of 371 pounds of bad fish "was a matter that had escaped his notice." In the end the council instructed the markets committee to institute a prosecution which most people will think was called for.

Coöperative Convalescent Homes.

The Coöperative Association, formed a few months ago to establish convalescent homes at Lytham and Otley, has now been registered under the Industrial and Provident Societies Act. At present 135 societies, members of the association, have subscribed for shares to the amount of £8640. To carry out the scheme £24,000 will be required and when the societies in the section have raised £16,000 the Coöperative Wholesale Society will take up shares to the value of £8000. This is a case of self help for which we may hope success.

April 19th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Death of Professor Andrew Peebles Aitken.

Dr. Andrew Peebles Aitken, who has for nearly 30 years been professor of chemistry and toxicology in the Royal (Dick) Veterinary College, Edinburgh, died on April 17th at his residence in Edinburgh. Dr. Aitken received his education at the University of Edinburgh, where he graduated as Master of Arts in 1867 and as Doctor of Science in the department of chemistry in 1873. He subsequently worked at Heidelberg and on his return to Edinburgh he was appointed assistant to Dr. A. Crum Brown, the professor of chemistry in the University.

Public Health Appointment.

Mr. James McR. Cowie, M.D. Aberd., D.P.H., has been appointed medical officer of health and public analyst for Burton-on-Trent. Dr. Cowie has for some time been assisting Dr. J. Niven, medical officer of health of Manchester.

Aberdeen Dispensary: Appointment of Medical Officer.

At a meeting of the managers held in the town hall, Aberdeen, on April 15th the chairman, Lord Provost Walker,

proposed the following motion which was agreed to unanimously :—

That the managers resolve to enter in the minutes an expression of their deep regret at the early death of Dr. W. Findlay who had been for several years one of the medical officers of the General Dispensary and who had during the whole of the period conducted with marked ability the work falling to him in affording advice to the poor of the district and in imparting instruction to the medical students attending the practice of the institution.

The applicants for the post vacated by Dr. Findlay were Dr. J. W. Adam, Dr. W. F. Croll, Dr. Henry Fraser, and Dr. Anne Mercer Watson. The voting was by ballot. The first vote resulted as follows: Dr. Adam, 33; Dr. Croll, 28; Dr. Watson, 7; and Dr. Fraser, 6. The final vote resulted in the appointment of Dr. Adam, he having 38 votes to 35 given for Dr. Croll.

Public Health of Aberdeen.

A meeting of the public health committee of the Aberdeen town council was held on April 13th. It was reported that the death-rate for last month was 20·93 which is rather higher than for the corresponding month last year but somewhat below the average. Three cases of small-pox were reported, including one recent case of a woman in Palmerston-road.

University of Aberdeen General Council.

The statutory half-yearly general meeting of this council was held at Marischal College on April 13th, Principal Lang presiding. The report as to the statistics and finances of the University was submitted. The Principal said they would see that their position as a University was much more encouraging than it was a few years ago. For the first time for long he thought the University felt in the condition of being somewhat easy, not crippled and burdened with financial outlooks. Not that they should lay any flattering unction to their souls and think that all was right, but they were in a better position certainly than they were and they could hope to be in a better position still.

April 19th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The New Provost of Trinity College.

Dr. A. Traill, the recently appointed Provost of Trinity College, was entertained by the Corinthian Club on April 16th, Sir Charles A. Cameron, the President, occupying the chair. In reply to a remark of the President, Dr. Traill said that he was the first graduate of the medical profession who had been made Provost.

Royal Academy of Medicine in Ireland.

Dr. James Craig and Dr. R. Travers Smith are candidates for the office of general secretary to the Royal Academy of Medicine in Ireland about to be rendered vacant by the resignation of Mr. J. B. Story.

Chair of Botany in Trinity College.

At a meeting of the board of Trinity College held on April 16th Dr. Henry Horace Dixon was appointed to the chair of botany vacant by the resignation of Dr. E. Perceval Wright. Professor Dixon, who has been Dr. Wright's assistant since 1892, is the author of many important papers which have appeared in the Transactions of the Royal Society, the Royal Dublin Society, and the Royal Irish Academy.

The Registration of Nurses.

A meeting of the Irish Nursing Association was held at the Royal College of Physicians of Ireland on April 15th. Dr. James Little occupied the chair and in introducing Mrs. Bedford Fenwick said that he had an open mind on the questions which were to be brought before the meeting. The questions which had been raised in the discussion on the State registration of nurses as put forward had raised a storm which he had not any idea of until he received by post some documents bearing on the subject. Mrs. Bedford Fenwick addressed the meeting which was large, the hall being filled to its utmost capacity. In her statement she alluded to the fact that there were now 60,000 trained nurses in England and 6000 in this country; that registration of nurses was no novel question as it had been advocated for more than 30 years. A Bill, moreover, was now introduced which proposed that there should be a central executive body of 31 to control the registration of nurses in the three countries, the duties of which body had not been too closely defined, as what was desired was that a Bill should be brought forward which could be discussed in committee by those qualified to do so. Sir John W. Moore said that, like the chairman, he had an open mind on the subject, with a leaning towards registration. The motions which he proposed were :—

1. That it is essential the nurses throughout the United Kingdom should be efficiently educated for the performance of the responsible duties intrusted to them. 2. That a minimum standard of education and common rules of discipline can be secured only by an Act of Parliament. 3. That as a preliminary to such legislation it is desirable a Select Committee of the House of Commons should be appointed at an early date to inquire into the whole nursing question.

He went on to say that the British Medical Association had given its opinion in favour of registration many years ago but that a sudden opposition had sprung up in London to the proposal for the State registration of nurses. The proposal that a committee of the House of Commons should be asked to consider this question was certainly a reasonable one. He did not think it was wise on the part of the nurses to describe their calling as a "profession"; it would be much better to use the designation "calling." Dr. O'Carroll, in seconding the motions, remarked that at present there was nothing to prevent anyone being employed as a nurse who put on a uniform. Dr. A. R. Parsons said that there was no demand either by the nurses themselves or by the public for any State recognition of nurses. Sir Thomas Myles, on the other hand, could not understand why there should be any opposition to the proposed reform. Sir Christopher J. Nixon considered that the proposal was one which deserved to be supported by the Dublin medical schools. The motions were carried by a substantial majority.

The Belfast Board of Guardians.

A question of the payment of a medical fee came before the Belfast guardians on April 12th which illustrates the way in which Irish dispensary medical officers are treated. Dr. W. D. Donnan, dispensary medical officer of Holywood, near Belfast, wrote to the board stating that he had felt it to be his duty on April 9th to call in Dr. Gardner Robb, physician to the workhouse fever hospital, to see a dispensary patient who had a suspicious rash which he feared might be small-pox and whom he did not wish to send to the union fever hospital without having Dr. Robb's opinion. Fortunately, Dr. Robb did not consider the case to be one of small-pox and he begged to ask the board to sanction the payment of Dr. Robb's fee which was two guineas. The board declined to do so and one guardian, I regret to say a woman, said, "Let Dr. Donnan give Dr. Robb the two guineas himself," while the chairman added, "Yes, let him pay the fee himself. It is a great piece of audacity." The ground which the guardians take is that the city corporation receives small-pox cases into the Purdysburn Hospital and that they have nothing to do with such cases but they are clearly in error as such a contention could only apply to Belfast cases, while this was a *bonâ fide* dispensary patient outside the area of the Belfast city corporation but within the Poor-law district over which the Belfast guardians have control, and Dr. Donnan was perfectly within his rights in asking for an expert opinion in what was undoubtedly a "difficult" case and a state of affairs provided for by the Local Government Board. Suppose the case had turned out to be small-pox and that Dr. Donnan had not been extra careful and that an epidemic of small-pox had as a result arisen, I wonder, then, what would this same board of guardians have said. Unquestionably it would have censured Dr. Donnan. The Belfast board of guardians must make provision for dealing with small-pox cases in its area which is outside the boundaries of the city of Belfast.

The Mater Infirmorum Hospital, Belfast.

From the twentieth report, just published, for the year ending Oct. 31st, 1903, it appears there were 1508 intern cases (932 medical and 576 surgical). 328 surgical operations were performed. 42 deaths occurred during the year, of which 32 were medical and ten were surgical cases. Of these seven were moribund on admission. The mortality was 3·5 per cent. There were 19,980 extern cases. The expenditure for the year was £5008 9*s.* 3*d.* The income was barely sufficient to meet current expenses and a special appeal is made for additional funds which are urgently needed.

Portrush Cottage Hospital.

The Hopefield Cottage Hospital, Portrush, a much needed

institution, will shortly be opened formally. The wards have for the past three months been occupied by patients and efforts are being made to raise additional funds on behalf of the hospital.

April 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Number of the Tuberculous in the Paris Hospitals.

A MEDICAL journal has just carried through an inquiry into the number of tuberculous patients under treatment in the Paris hospitals. Of 4117 patients passed under review 1685 were tuberculous—namely, 1146 men and 539 females, or a proportion of 40 per cent. A similar inquiry had already been made by M. Mourier, formerly director of the Assistance Publique, who arrived at the result of 45 per cent. These figures are important at the present time when it has been decided to reserve two or three of the Paris hospitals exclusively for the use of tuberculous patients.[1] As a matter of fact, the number of tuberculous persons in Paris is far greater than is indicated by the above figures. Even when the 2000 tuberculous patients who are to be treated in the hospitals are taken away from the general number there will easily be 2000 others to take their place. Who can tell whether the patients will go willingly into these "hospitals of death" where they can be under no illusion as to the nature of their malady? In hospitals when the plan of reserving certain wards for tuberculous patients has been tried as soon as those suffering from phthisis saw that they were to be in company with their fellow sufferers they insisted on leaving.

The Therapeutic Uses of the Peroxides.

M. Gilbert recently read a paper before the Society of Biology on the Therapeutic Uses of the Peroxides and as a sequel to this paper M. Albert Robin read another before the Therapeutical Society giving his experiences of this drug which he has for some time past employed. The peroxides of calcium and of magnesium give up the whole of their oxygen when they come in contact with the gastric juice. If, however, they are given in a capsule of keratine so that they can pass into the bowel before being decomposed they have a powerful antiseptic action. Under their influence the conjugate potassium indoxyl sulphate present in the urine in cases of septic absorption rapidly diminishes. Peroxides diminish the fœtor of the stools and are the best means for overcoming diarrhœa due to a fermentative origin. On this account they may be made to serve as a diagnostic agent, for they have hardly any effect in diarrhœa due to serous, vaso-motor, bilious, nervous, or tuberculous causes. M. Robin quoted two typical cases which were under his care at the Beaujon Hospital. One was that of a patient in the third stage of phthisis who had profuse diarrhœa, probably of tuberculous origin. The stools were liquid, without marked fœtor, very slightly coloured, and neutral or alkaline in reaction. Peroxide of magnesium in doses of one and a half grammes per diem had no effect and reliance had to be placed upon astringents such as tannin, opium, and bismuth. If these were given up the diarrhœa returned and oxide of zinc had to be given. The other case was that of a patient suffering from pleurisy who during convalescence developed acute diarrhœa with very fœtid stools, giving a markedly acid reaction to litmus paper. This condition seemed to be due to gastric hyperacidity, the existence of which was confirmed by an analysis of the stomach contents and which in its turn was due to fermentation. Peroxide of magnesium was given at first in doses of one gramme per diem so as to act on the stomach contents and afterwards in a keratine capsule so that it might act directly on the intestinal contents. Within a few days the stools became less frequent and lost their fœtor. As, however, they remained acid the stomach contents at the end of a meal were saturated by a mixture of calcium carbonate and calcined magnesia, two days after which the stools became absolutely normal. In the belief that oxygen liberated from the peroxides would be absorbed by the blood Hatch, Havald, Moné, and Munstein have suggested that magnesium peroxide should be given in cases in which the direct action of oxygen seemed advisable. They recommend its use in certain cases of anæmia and in certain cases of joint disease.

April 19th.

[1] THE LANCET, April 16th, p. 1085

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

The Midwives' Petition.

A QUESTION of practical importance is at present before the legislative council of the canton of Zürich. As the rules and regulations for admission to the cantonal hospitals, both those which receive paying patients as well as those which provide for the needs of the pauper population, are at present under consideration the midwives of the district have petitioned asking that the fees charged to the paying class of patients should be raised. They plead that the present charges at the obstetric clinic should be raised as the interests of both the ratepayers and the midwives are suffering severely in consequence of the system now in force. The number of women admitted at the obstetric clinic for the purpose of their confinement has been rapidly increasing from year to year; it has, in fact, more than doubled in ten years, for there were 1344 admissions in 1902 as compared with 540 in 1891. Thus nearly one-fourth of all the confinements of the town of Zürich, which has a population of 160,000, take place at the clinic and three-fourths are attended by the midwives and the medical practitioners. I must here mention that the great majority of all the normal confinements, perhaps over 90 per cent., are conducted by the midwives and medical aid is only summoned in cases of abnormal labour, this portion of the work is falling into the hands of the numerous medical specialists, male and female. I must also add that the midwives are well trained for their duties as they have to spend six months at the clinic in study in order to obtain a legal diploma. They also have to attend repetition courses at the hospital every three or four years as long as they continue in the profession. The ratepayers of the canton of Zürich are put to considerable expense owing to the fact that the middle-class patients are undercharged at the clinic where they get the best of advice and attendance for nominal fees. The daily cost at the clinic is 2*s.* 5*d.* per head; the average amount paid in is only 1*s.* 5*d.*, and the deficit to be covered amounted in 1891 to £1700 but has risen in 1902 to £5100 for the obstetric clinic alone. The midwives argue that if this arrangement extended only to paupers nobody would have reason to complain but the middle classes have begun to use, or rather to abuse, these charitable institutions to the detriment of the midwives who are under a legal obligation to attend normal pauper confinements for the meagre sum of 12*s.*, whereas the patients who could pay from £1 to £2 for a confinement make use of the hospital. At present persons declaring their incomes at £80 a year pay only 8*d.* a day when in the hospital; this sum should be increased to 1*s.* 3*d.* per day. Persons declaring their incomes at amounts up to £120 should pay 2*s.* a day instead of 1*s.* as at present. It must also be remembered that declared incomes are notoriously some 20 to 50 per cent. short of the real income, owing to the high rate of income tax—namely, 1*s.* 6*d.* in the pound. It seems most necessary that the canton of Zürich, which is hampered by a deficit now amounting to £160 000, should do everything in its power to avoid useless deficits as in the above case. This petition has caused the scale of charges for admission to the cantonal clinics to be returned to the authorities for revision.

Zürich, April 12th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Cattle Plague.

THIS disease, also called rinderpest or bovine typhus, has often been introduced into Egypt from Turkey or Syria, where it is endemic as in South Africa and India. One of the first duties of the newly formed sanitary department in 1884 was to combat it and matters were then impossibly difficult owing to the complete absence of veterinary surgeons and all literature on the subject. In fact, the Egyptian Government of that day was so averse to increasing the number of English officials that it actually

sent back to England, without even interviewing him, the first civilian veterinary surgeon who was brought out here to work for it. Now matters are happily improved, a large staff of English veterinary surgeons inspect the country, and a flourishing college for native students stands in the grounds of the sanitary department. In England and many other European countries cattle diseases are dealt with by the Agricultural Board but as this is unhappily non-existent in Egypt all veterinary questions are under the control of the sanitary department, so ably presided over by Sir Horace Pinching. Cattle plague died a lingering death in 1886 and Egypt remained free from it till about a year ago, when it was re-imported from Syria. Attempts were made last summer to get serum from Constantinople but inaccurate instructions which accompanied the supply caused the death of the cattle experimented on and the serum treatment became extremely unpopular. Now there is a well-appointed serum institute in the Abbassiyeh desert, near Cairo, where 100 bulls are kept immunised against cattle plague. Each bull is bled every fortnight and gives seven litres of blood each time; these seven litres yield 65 per cent. of serum and a protective dose of serum is 30 cubic centimetres per 600 pounds of the weight of the animal. Roughly speaking, fully grown beasts weigh 1000 pounds and bulls are chosen because they are stronger than cows and yield more blood. In order to immunise a bull five cubic centimetres of virulent blood are injected subcutaneously over one shoulder and an appropriate dose of serum over the other shoulder, according to the animal's weight. This is practically the simultaneous method of Dr. G. Turner of South Africa, which has been adopted in this country after experimenting with other methods. After the double injection the bull, the normal temperature of which is from 101° to 102° F., has fever for from six to ten days, the temperature running up to 105°. When the febrile reaction has subsided the bull is injected subcutaneously at one sitting with four litres of virulent blood which produces a second attack of fever lasting about a week, the temperature again rising as high as 105°. After the second attack of fever is over and the bull has rested four or five days he is ready to be bled to furnish protective serum. In two months' time, after four bleedings, he is reinforced with another four litres of virulent blood when febrile reaction again takes place. After another two months he is again reinforced and this may be repeated until he becomes "salted"—i.e., incapable of becoming affected by the toxin and unable to yield antitoxin—when he can be safely sold to the butcher. One animal, however, has now been in constant use for seven months. Virulent blood is obtained by bleeding at the height of the fever on the sixth day, allowing three days for incubation and three days for the fever to rise. To obtain serum as soon as a bull is bled the blood is allowed to clot in tall cylinders and the expressed serum is then decanted and centrifugalised in Cairo so as to get rid of any blood corpuscles which may be present, after which 0·5 per cent. of carbolic acid is added as a preservative. Every 100 litres of serum so prepared are standardised by testing against virulent blood in a number of fresh bulls. The serum is then packed in bottles containing 220 cubic centimetres each and despatched to the veterinary staff in the districts. The quantity now prepared is 4000 doses a month, which is much less than the actual requirements, but it is hoped that shortly, owing to the increased strength of the serum, about 10,000 doses a month will be sent out. There are two methods of using the serum in the villages: (1) to give a dose of serum to each animal of a suspected herd, thus conferring a passive immunity for a period of from three to five weeks (the great advantage of this temporary treatment is that the farmer at a busy time of the year can continue to work his cattle on the land for ploughing, &c.); and (2) to "vaccinate" by inoculating once by the simultaneous method already mentioned and thereby secure immunity for years. This second method is dangerous in the country districts because, owing to want of care and imperfect knowledge on the part of the owners, from 10 to 25 per cent. of the animals die. The chief causes of this high mortality, which has brought some discredit on the serum treatment, are that the ignorant owners unless prevented continue to work the cattle in the fields and also expose them without protection to cold air at nights even when the poor beasts are in the midst of their febrile reaction. However, at the Serum Institute, where the bulls are treated with the care necessary for all sick animals, very few die. For instance, not one has succumbed out of the last 80 immunised, though a slight mortality did occur early in the experiments before it was understood that sick nursing was so all important. Every beast's rectal temperature is taken by chart three times a day; it is stabled by night in clean sheds made of wood and matting, it is exposed to the sun all day, and its food is carefully regulated, consisting chiefly of clover, beans, and chopped straw, while of course it does no work. The institute since June has been under the control of Dr. W. St. C. Symmers, the professor of pathology and bacteriology at the medical school, assisted by one Englishman, two native veterinary surgeons, and a number of servants. Professor Symmers is specially fitted for this work after his long apprenticeship in the preparation of diphtheria and other antitoxins in England. In addition to this institute he is also controlling work at the slaughter-house in Old Cairo where a large number of animals are tested and partially immunised and whence suitable bulls are after quarantine transferred to the Serum Institute. The advantage of this quarantine process is that the animals can be carefully tested and if found to be suffering from any other disease they can be discarded and so less risk is run of infecting the bulls at the institute. Quarantine is just now of the highest importance because other diseases are prevalent, such as Texas fever (pyrosomiasis or hæmoglobinuria), foot and mouth disease, and a but little understood complaint which is thought to be Rhodesian fever. It is this last disease at which Professor Koch is now working in South Africa and which is associated with a rod-shaped protozoon in the red blood corpuscles, reminding one of malaria in the human subject. Professor Koch has been invited here in May by the Egyptian Government to give us the benefit of his knowledge on cattle diseases. Previous experience in Egypt and other countries tends to show that rinderpest will temporarily die down during the hot summer months but will reappear in the autumn and the Serum Institute must therefore continue to work at high pressure. Buffaloes also contract rinderpest but do not seem to be so susceptible as other cattle. Some gazelles which have recently died at the Zoological Gardens here had symptoms and post-mortem appearances closely resembling those of cattle plague. One of the best features of the Serum Institute is that it is practically self-supporting; over £6000 have been expended but this sum has been repaid by cattle owners, though the serum is invariably given to those who cannot afford to buy it. H. H. the Khedive, who is a considerable owner of cattle, has visited the institute several times and has sent many of his cattle to be immunised. This may encourage some of the disbelievers who are fully persuaded when their herds are attacked by food and mouth disease and Rhodesian fever that the serum is responsible. Already about 150,000 head of cattle have died, representing, it is calculated, a loss to the country of nearly £2,000,000. Fortunately, about one-fourth of the survivors in Upper and Lower Egypt are already immune after recent attacks of cattle plague. Veterinary tropical knowledge is quite in its infancy and experts cannot yet differentiate between some of the diseases I have mentioned either by clinical symptoms or post mortem signs. Dr. Bitter and Dr. Dreyer are working daily at blood films from the sick animals and may in the future be able to throw some light on the problems which are of fascinating perplexity.

Cairo, April 10th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Quarantine.

THE necessity of federal quarantine regulations was alluded to in a former communication. Since then the Tasmanian health authorities have written to the Board of Health of Victoria urging the necessity of making further efforts to secure federal quarantine. The board replied "that the time had arrived when joint quarantine regulations for Australia should be framed." As is usually the case, the passengers quarantined at Melbourne on arriving from New Zealand, owing to the outbreak of small-pox there, have made protests. One complaint was, however, unusual—being a charge of favouritism owing to the use of undue "influence" by a very influential personage. Mr. J.

Thompson, a member of the Governor's Council of Madras, with his family and a nurse, was quarantined with the other passengers by the steamer *Victoria* from New Zealand and they were all almost immediately released as the result of telegrams which passed between Mr. Thompson and the "influential personage." Dr. D. A. Gresswell, the chairman of the Board of Public Health, denies that there was any favouritism and states that Mr. Thompson and his family were released because it was considered that they had complied with the regulations, having been vaccinated several times.

The Declining Birth-rate in New South Wales.

The appointment of a Royal Commission to inquire into the decline of the birth-rate and the mortality of infants in New South Wales was mentioned in THE LANCET of Oct. 17th, 1903, p. 1132, and the names of the members of the Commission were at the same time given, Dr. Charles K. Mackellar, M.L.C., being the president. The Commission held 40 meetings and took the evidence of 96 witnesses, of whom 26 were medical practitioners and eight were representatives of the various religious denominations. The report, which is published by the Government printer in Sydney as a Blue-book of 62 printed pages and 27 full-page or folded diagrams, is dated March 3rd, 1904, and is signed by the President and 11 of the other 12 Commissioners. It is an exhaustive document dealing with every phase of the subject. The commission finds that there has been a marked decline in the birth-rate in New South Wales since 1899. It points out the remarkable unanimity of opinion among medical men that deliberate prevention had become exceedingly common during recent years and that the means used to this end are both deleterious to the general health and frequently bring about pathological sterility. The evidence, the commission says, shows conclusively that the practice of prevention by artificial means is common in all classes of the community and has greatly increased during the last 15 years. The inducement of miscarriage, it is said, is alarmingly frequent and justifies it being regarded as a well-defined factor in the decrease of the birth-rate. The commission suggests amongst other things that with a view to counteracting the desire for prevention among women increased public hospital accommodation in the metropolitan and country districts should be established for parturient women, and especially for married women, and that a large number of women should be encouraged to train as obstetric nurses. In view of the growth of procuration of abortion and miscarriage it is considered advisable that a department of the State Government should be intrusted with licensing, supervision, inspection, and control of private hospitals, lying-in homes, and maternity homes (other than public hospitals) where pregnant women are received for treatment or care in relation to their pregnancy or for their confinement. The commission states that the Government of New South Wales should take steps to prohibit the sale, distribution, importation, manufacturing, advertising, or purchasing or receiving of goods, articles, contrivances, or other things designed to be used for the prevention of conception in women. With the view to strengthen the religious restraint the churches are invited to institute and to devise a general crusade of such an impressive character as would arouse a recognition of the immorality and selfishness of the practice of deliberately restricting the birth of children. The practices involved in the limitation of families were responsible for much physical suffering, for a deadening of the moral sensibility, and for a degradation of character among those who resorted to them. These effects must have an unwholesome influence on the general character of the people who moved in a social atmosphere so vitiated. Defective health, defective morals, and defective character were already manifesting themselves as warnings of a more marked deterioration likely to ensue. Mr. Teice, actuary and manager of the Australian Mutual Provident Society, has compiled some statistics on the subject. He finds that the decrease in the birth-rate has been about 30 per cent. in 21 years. During the census periods of 1881 and 1891 the proportion of married women at ages up to 34 years did not differ materially from those above that age. The figures for 1901 show that the married women of ages 35 years and upwards exceed those below the age of 35 years by 30·6 per cent. This change in the proportions has been coincident with the decline in the birth-rate and he attributes the decreased birth-rate to the fact that the proportion both of married men and married women at the ages at which generation is most active has largely decreased. The reasons for this, in his opinion, are (1) the increasing luxury of the time; (2) the increased independence and employment of women; and (3) the cessation of immigration.

Hospital Affairs.

The annual report of the Sydney Hospital stated that the subscriptions amounted to £55 more than last year. During the year 4657 in-patients and 16,877 out-patients had been treated and 2627 major operations had been performed. The work had been carried on smoothly and efficiently. The x-ray department had been reconstructed and a second outfit added.—The diphtheria branch of the Sydney Children's Hospital at the Glebe has been closed, except for very urgent cases, the Government having arranged to provide accommodation for 37 diphtheria cases at Little Bay. Patients received at the Glebe will be injected with antitoxin and then forwarded to Little Bay.—The Infectious Diseases Hospital, Melbourne, started seven years ago is not open for patients yet but something like finality seems near. A memorandum, prepared by a conference of municipal representatives, for the maintenance and control of the institution has been agreed upon. The hospital is to be vested in the municipalities as trustees. The cost of maintenance is to be contributed on the basis of the annual assessment of the municipalities with quarterly claims on the Government for its moiety of the amount expended. The trustees are to appoint the committee of management, the term of office being three years. There will be on the committee representatives of Melbourne, Fitzroy, Richmond, St. Kilda, North Melbourne, Brunswick, and Coburg. The cost of maintenance of all patients from districts other than those represented on the trust is to be charged for at rates fixed by the committee.—The medical staff at the Women's Hospital, Melbourne, has suggested the formation of an external midwifery department in connexion with the hospital and the committee has asked the staff to formulate a scheme.—A curious question in hospital management is raised by a decision of the Department of Public Health in New South Wales. A man was taken by the police to the Western Suburbs Cottage Hospital for admission. The medical officer who saw him refused to admit the patient as he was intoxicated and violent and the institution had no wardsman to control him. The police then took the patient to the lock-up and summoned a medical man to attend him. This practitioner said that the patient had concussion of the brain. The Health Department has decided to deduct from the Government subsidy to the Western Suburbs Hospital the expenses incurred by the police in obtaining treatment for the patient.—Mr. Charles MacLaurin, M.B.Edin., has been re-elected honorary assistant surgeon to the Prince Alfred Hospital, Sydney.

Charge against a Medical Man.

At the February sittings of the Supreme Court, Warrnambool, Victoria, Mr. Edmund D. la Touche was acquitted on a charge of performing an illegal operation on a young woman.

March 10th.

Obituary.

SIR HENRY THOMPSON, BART., M.B. LOND., F.R.C.S. ENG.,

SURGEON-EXTRAORDINARY TO H.M. THE KING OF THE BELGIANS; EMERITUS PROFESSOR OF SURGERY AT UNIVERSITY COLLEGE, LONDON; CONSULTING SURGEON TO UNIVERSITY COLLEGE HOSPITAL, ETC.

WE regret to announce the death which occurred on Monday afternoon last of the veteran and distinguished surgeon, Sir Henry Thompson. Sir Henry Thompson was only ill for a few days and bore his burden of 84 years so lightly and with such full appreciation of life that the announcement of his death has come as something of a shock to the medical world.

He was born on August 6th, 1820, at Framlingham in Suffolk, in which small market town his father, Mr. Henry Thompson, had resided for many years. His mother was Susannah the eldest daughter of Samuel Medley, the artist. Having received his early education at a neighbouring grammar school he determined to apply himself to the study of medicine and became apprenticed to a local surgeon in accordance with the custom of those days.

Having studied and assisted in practice for two or three years he proceeded to University College, London. His student days at University College have been described with some accuracy by him in one of his novels and seem to have been devoted to the pursuit of his science. His was a thoroughly healthy mind and his habits both of life and thought from the beginning of his working career were such as to encourage in a remarkable degree the development of the true surgeon, robust, active, and, above all, resourceful. He loved work and even as a student was never so happy as when mastering some intricate detail of surgical anatomy.

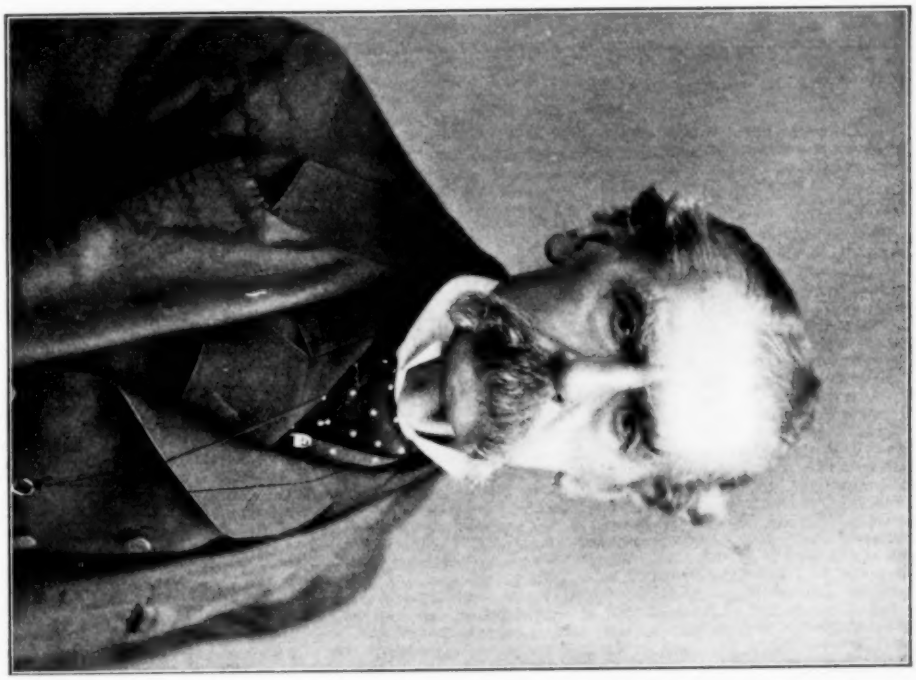
After an unusually successful career as a student Henry Thompson in 1850 took the diploma of Member of the Royal College of Surgeons of England, his great friend, the late Sir John Russell Reynolds, passing at the same examination, and a year later they both proceeded to the degree of M.B. at the University of London, Thompson securing the first place in obstetric medicine and the second place in surgery, and Reynolds the first place in medicine and the third place in surgery. His friendship with Russell Reynolds throughout the career of the latter, whose death we recorded in THE LANCET of June 6th, 1896, p. 1582, was unbroken and of the closest description. The mutual influence of these two leaders of our profession, the one upon the other, may be noticed in many steps of their respective careers and the following are Sir Henry Thompson's own words addressed to his old friend: "We first met among a crowd of freshmen, strangers, at the gate of University College, in the autumn of a year late among the forties. I know no other among the friendships then made which has so borne the test of time, none which has so soundly ripened, none which is now so highly prized as yours. You and I have watched with interest the other's course, divided as each has been between long periods of continuous devotion to professional study and short intervals of happy diversion in pursuit of art."

In 1850, on the retirement of Mr. Moncrieff Arnott from his post of surgeon to University College Hospital, Henry Thompson, who had served a portion of his term as house surgeon to that gentleman, was transferred in a similar capacity to his successor, the late Sir John Erichsen, and assisted the latter in his first operation as full surgeon. With Sir John Erichsen he maintained a warm and intimate friendship which continued until the death of the former in 1896. Thompson held more than one house appointment between 1850 and 1853, in which latter year he was appointed assistant surgeon to University College Hospital. This position he occupied for ten years and in 1863 became full surgeon. During this period he made a point of studying the methods of the great masters of other schools, for example, Civiale in Paris and Keith in Aberdeen. Three years later he became professor of clinical surgery in University College, of which body he had been for more than five years a Fellow. Throughout the most active portion of his career his old hospital and school received the benefit of his valuable work and during his connexion with the institution he was associated with a group of men whose names will ever be remembered in medicine. In addition to Reynolds and Erichsen, Sir Henry Thompson had as colleagues at different times Sharpey, the pre-eminent physiologist; Ellis, the anatomist; Richard Quain, the surgeon; Parkes and William Jenner, who need no qualification; Walshe, Wilson Fox, and Berkeley Hill. With these men he worked to raise the medical school of University College, London, to its very high level, and although his private practice was very extensive and successful it was not until 1874 that he retired from the active staff and became consulting surgeon.

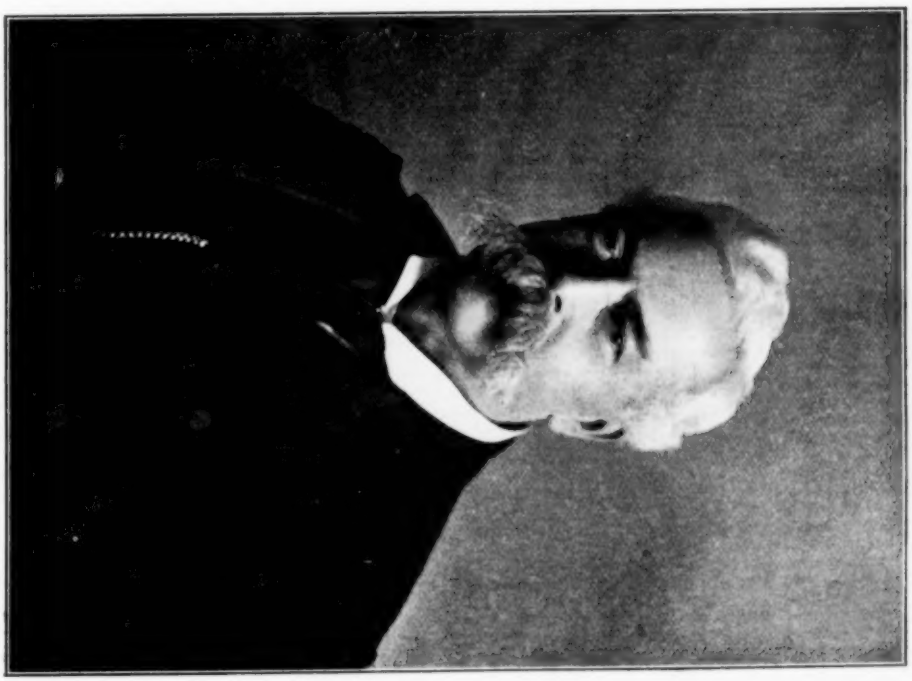
Sir Henry Thompson's connexion with the Royal College of Surgeons of England dates from 1850 when, as above mentioned, he became a Member of that body. In 1852 his masterly essay on Stricture of the Urethra gained him for the first time the Jacksonian prize; a year later he passed the examination for the Fellowship and in 1860 he again successfully competed for the Jacksonian prize, the subject being the Healthy and Morbid Anatomy of the Prostate Gland. He thus shares the honour with the late Mr. George Calvert of securing the prize on two occasions. This, when we call to mind that the prize was instituted in 1801 and that there is no regulation preventing several attempts to gain it, is a noteworthy achievement. In 1863 he was appointed Hunterian Professor of Surgery and Pathology at the Royal College of Surgeons of England in succession to Mr. Jonathan Hutchinson. While acting as assistant surgeon, and afterwards as surgeon, to University College Hospital Sir Henry Thompson performed a very large number of operations for stone with singular success and as this success likewise attended his operations in private practice his reputation from being local became virtually world-wide. Among his patients was the late King Leopold of Belgium, upon whom in 1863 he performed a most difficult and dangerous operation with perfect success. His Majesty had already been attended by the famous Civiale, under whom Thompson had studied, and a partially successful lithotrity had relieved his symptoms. They returned, however, with severity and when Thompson saw his patient in Brussels the King, sceptical of the value of surgery, refused to allow a proper examination to be made. Thompson, however, was firm as to the necessity, and persuaded the patient to trust him, with a completely happy result, the crushing of the stone being completed in three sittings. The King appointed him his surgeon-extraordinary and also made him a Companion of the Order of Leopold of Belgium, in which order he was promoted in 1876 to the grade of Knight. The present King of the Belgians also appointed him surgeon-extraordinary. Some ten years later Thompson, who in the interval had been made a Knight, was summoned to the bedside of the Emperor Napoleon III., then living in exile at Chislehurst. He diagnosed the presence of a vesical calculus and recognised the urgency of the symptoms, but the Emperor could not decide to have lithotrity performed until some months later. Too long a time had really elapsed and although the surgical proceedings were justified at the post-mortem examination, as being calculated to give the illustrious patient his only chance of life, he succumbed after the second sitting.

Sir Henry Thompson's special surgical experience enabled him to have very distinct views upon all the various methods of procedure in vesical cases, and his opinion was highly valued by medical men, because he was so clear in his explanations and so quick to suit treatment to circumstance. Throughout his career Sir Henry Thompson was a warm advocate of the suprapubic operation as opposed to the lateral, and for his advocacy he gave six reasons, viz.: (1) that in the suprapubic operation there is no important structure near the line of the incision that can be injured by the knife or forceps—the rectum and sexual organs being out of the way; (2) there is more space for removing the stone; (3) there is no risk of arterial hæmorrhage; (4) the incisions are more easily made in that they are made under the eye of the operator; (5) the outflow of urine is easy and direct; and (6) antiseptic dressings can be easily and readily applied. He had an unrivalled opportunity of verifying his views, for throughout five and-twenty years he was engaged in operating on such cases with extremely successful results. His tact in the management of a patient was almost equal to his skill, while his mechanical ingenuity has been of great service to the profession and a large number of improvements were introduced by him in such instruments as are in common use in vesical and prostatic operations.

The literary works of Sir Henry Thompson were popular as well as practical, for the profession, students and practitioners alike, recognised in what he wrote his perfect mastery of his subject. His principal work was "Diseases of the Urinary Organs," which was first published in 1868, and consisted of a series of lectures delivered by him at University College, which, having been reported verbatim by a shorthand writer, were printed with a few alterations and condensations in THE LANCET. The volume of 1868 was a somewhat meagre-looking work, but in its seven subsequent editions it has gradually increased in size until in 1888, when the eighth edition was published, it formed a substantial text-book. This edition contains a *résumé* of Sir Henry Thompson's entire experience in operations for calculus up to the end of 1885, numbering in all about 900 cases. The general aim of the work was to produce in condensed form an epitome of practical knowledge on the subject of urinary diseases, culled not only from the author's experience but from the works of the leading British and foreign writers and operators. The book has been translated into French, German, Italian, Spanish, and Russian. His other and supplementary work, "Practical Lithotomy and Lithotrity" has perhaps achieved an even greater success than the foregoing, being used as a guide to successful operation throughout the medical schools of Europe. "Diseases of the Prostate," founded on his Jacksonian essay of 1860, has been through six



SIR HENRY THOMPSON, BART., F.R.C.S. ENG.



SIR PHILIP CRAMPTON SMYLY, F.R.C.S. IREL.

large editions, and "Stricture of the Urethra," based upon his former successful dissertation, has in a much enlarged and improved form been re-published three times. He contributed largely to the medical journals, to the Transactions of various learned societies, and to such compilations as "Holmes's System of Surgery," in which he supplied the section dealing with the Surgery of the Urinary Organs. Although his special subjects occupied the more active moments of his life Sir Henry Thompson took the widest interest in the topics of the day and was the author of a very large number of articles which appeared in various first-class magazines and reviews, dealing with such diverse subjects as Moderate Drinking, Cremation and the Disposal of the Dead, Diet in its Relation to Age and Activity, and a Serious Attempt to Estimate the True Value of Prayer for the Sick, the last named, in the form of a letter to the late Professor Tyndall, causing considerable stir in theological circles. His opinions on the subject of cremation were very decided and he may, in fact, be said to have been in great measure the moving spirit in the inauguration of the revival of that method of disposing of the dead. From 1874 onwards he was president of the Cremation Society and did much to forward its propaganda both in England and on the continent. On several occasions Sir Henry Thompson called public attention to the loose system prevalent in the matter of giving and receiving certificates of death. He was largely instrumental, by his letters to the medical and lay press, in drawing attention to the risks run by the public under existing methods, and when in 1892 Neil Cream, the poisoner, was condemned to death Sir Henry Thompson returned to the attack. By means of a deputation to the Home Secretary the matter was brought under the notice of the Government which ordered a Select Committee of Inquiry on Death Certification.

As a novelist Sir Henry Thompson—under the *nom de plume* of "Pen Oliver"—on two occasions made a more or less successful bid for popular favour. "Charlie Kingston's Aunt," if it does not rank high as fiction, undoubtedly shows imaginative gifts on the part of its author and is interesting in that it presents also a truthful picture of the life of a medical student some 50 years ago. His second work of fiction, "All But, a Chronicle of Laxenford Life," published in 1886, is a more ambitious work, and although its plot is commonplace it forms interesting reading. The earlier chapters comprise sketches of life in a Suffolk village and are full of humorous touches. Sir Henry Thompson was at his best when describing the quaint sayings and doings of the old-fashioned village folk among whom he had been born and bred, while in this book there is a fairly successful attempt at a psychological study—namely, the complex character of Lord Arthur Wynstanley. An additional charm is given to this novel by 20 full-page drawings by the author, in one of which he has portrayed himself as he appeared in 1885.

As an artist Sir Henry Thompson was much more successful than as a novelist. He had doubtless inherited his artistic talent from his grandfather, Samuel Medley, the painter of the well-known picture of a meeting of the Medical Society of London which hangs in the rooms of that society; while it must be remembered that he hailed from the county of Constable. From student days he had cultivated the habit of drawing what he saw, and after his appointment as surgeon to University College Hospital he painted regularly under the tuition of well-known academicians and was frequently "hung" at Burlington House.

As a host Sir Henry Thompson was famous for his "octaves," dinners of eight courses for eight people at eight o'clock. The company was always as carefully selected as the food, and during a quarter of a century the most famous figures in the contemporary worlds of art, letters, science, politics, diplomacy, and fashion found themselves sitting at his board.

Sir Henry Thompson, who was created a baronet in 1899, married in 1851 Kate Loder the famous pianist. Lady Thompson, who has been an invalid for years, survives her distinguished husband and her son, the present Sir Herbert Thompson, succeeds to the title. To them we tender our sympathies on the loss of the many-sided brilliant man who for so many years adorned the ranks of our profession. As man of letters and man of science, as man of work and man of pleasure, as artist and social reformer alike, Sir Henry Thompson has left his mark upon his generation.

The funeral took place on Thursday at the Golder's Hill Crematorium, the ceremony being brief and private, in accordance with Sir Henry Thompson's instructions.

SIR PHILIP CRAMPTON SMYLY, M.D. DUB., F.R.C.S. IREL.,

HONORARY SURGEON TO THE KING.

ONE of the most prominent members of the medical profession in Ireland has been removed by the death of Sir Philip Smyly, a man endowed by nature with many gifts and worthily occupying a high position. His last illness was of only a few hours' duration but he was a chronic sufferer from gout and his intimate friends had for about two years been aware that his constitution was seriously undermined. He had recently been on a visit to England, from which he had returned to his residence in Merrion-square, Dublin, and was there attacked with symptoms of cerebral hæmorrhage which proved fatal on April 8th.

His father, Josiah Smyly, was a well-known Dublin surgeon whose two sons, Philip Crampton Smyly and William J. Smyly, have in different branches of practice conferred honour on the family name which is commemorated by the Smyly Ward for children in the Meath Hospital. Sir Philip Smyly was born in Ely-place, Dublin, in June, 1838. When his thoughts were turned towards the medical profession the apprenticeship system was still in operation and he was accordingly indentured to his grand uncle Sir Philip Crampton who was made a baronet in 1839 and was three times President of the Royal College of Surgeons in Ireland. Sir Philip Crampton died in 1858 and his pupil was then transferred to Professor W. H. Porter. Young Smyly also attended classes at Trinity College, Dublin, and at the school of the Royal College of Surgeons in Ireland and acquired a knowledge of clinical work in the wards of the Meath Hospital. His student career gave some premonition of his future distinction from the importance of the prizes which were awarded him. In 1860 he became qualified as M.B. Dub. and L.R.C.P. Irel., after which he studied surgery and ophthalmology in Berlin and Vienna under Langenbeck, von Graefe, and other notable professors. In 1861 he was admitted L.R.C.S. Irel. and was appointed surgeon to the Meath Hospital as the successor to his former teacher, Professor Porter, an appointment which he continued to fill for more than 40 years. In 1863 he graduated as M.D. and was admitted F.R.C.S. Irel. In 1878, at the age of 40 years, he had the exceptional fortune to be elected President of the Royal College of Surgeons in Ireland and from 1893 to 1900 he represented the College in the General Medical Council. From 1869 to 1895 he held the appointment of surgeon-in-ordinary to successive Lords Lieutenant of Ireland. In 1892 he was honoured with a knighthood. In 1895 he was made surgeon-in-ordinary in Ireland to Queen Victoria and in 1901 honorary surgeon in Ireland to King Edward VII., a position which he retained to the end of his life. In 1897 the Household medal was conferred on him and in 1902 he received the Coronation medal. Other appointments which he held were those of president of the Irish Medical Association, president of the Irish Schools' and Medical Graduates' Association in London, consulting surgeon to the National Children's Hospital in Harcourt-street, consulting surgeon to the Rotunda Hospital, and vice-president of the Royal Zoological Society of Ireland.

Sir Philip Smyly's practice was naturally both extensive and lucrative. He was at the same time noted for his kindliness of disposition, his generosity to deserving causes and charitable objects, and his sympathetic manner towards his patients of all classes. For many years before the appearance of specialists in Dublin he was looked upon as the foremost expert in Ireland on affections of the mouth and throat. So long ago as 1862 he published a paper on the Surgery of Cleft Palate, introducing some specially curved knives suitable for staphylorrhaphy. In the *Dublin Journal*, 1883, he described a variety of mirrors for demonstrating the larynx. Besides being surgeon to the Throat and Ear Hospital for many years he filled the office of president of the British Laryngological Association for 1889–90. In connexion with general surgery he associated himself with his late colleagues at the Meath Hospital, the eminent surgeons Professor Porter and Dr. Macnamara, in advocating ligation of the common femoral—known as Porter's

operation—for the treatment of aneurysm of the femoral artery.

In personal appearance Sir Philip Smyly possessed the advantages of good looks and must be described as a man of fine presence. He was also a good conversationalist and possessed a variety of agreeable accomplishments, one of which was a proficiency in playing the violin. He had a high position in the Masonic Order, being a member of the Supreme Council of the thirty-third degree for Ireland, of which body he was the Grand Chancellor. He was also the representative of the Supreme Council of England. In 1864 he married the Honourable Nina Plunket, daughter of the third Baron Plunket and sister of the late Archbishop of Dublin. Three sons and five daughters were born to them, one of the sons being the present Chief Justice of Sierra Leone.

His funeral, which took place at Mount Jerome Cemetery, was attended by a great concourse of mourning friends and sympathetic spectators. On the arrival of the procession at the cemetery the draped mace of the Royal College of Surgeons in Ireland was placed on the coffin, the College being officially represented by Sir Lambert H. Ormsby, the President.

Medical News.

UNIVERSITY OF EDINBURGH.—The following is the official list of passes at the recent professional examinations for degrees in Medicine and Surgery:—

First Professional Examination.—G. J. Adams, R. C. Alexander, A. C. Barker, William Beggs, J. A. Belcham, Henry Blyth, William Boyd, Alexander Bremner, F. V. Nanko Bruce, Henry Burns, P. D. Cameron, Peter Chalmers, George Coats, C. E. A. Coldicut, H. M. Cook, A. C. Court, John Crocket, F. J. Davidson, C. H. Derksen, J. A. Duggan, W. G. Evans, J. P. Falvey, John Findlay, William Fleming, Kenneth Fraser, K. N. Ghosh, A. B. Gordon, Peter Gorrie (with distinction), A. G. M. Grant, R. D. Latimer Greene, J. O. Hamilton, R. W. Hauman, F. W. Hay (with distinction), W. S. Heron, A. M. Hewat, St. G. M. L. Homan, J. J. Jervis, M. J. Johnston, C. W. Kay, A. W. Kendall, H. W. Kerrigan, A. F. Lee, A. R. Leggate, Cecil R. Lethem, C. L. Louw, H. B. Low, G. J. Luyt, B.A., David M'Carroll, L. G. M'Cune, W. S. M'Cune, John Macliarmid, John V. MacDonald Thomas MacKeen, A. E. M'Iver, G. M. Mackay, W. J. M'Keand, J. C. Mackenzie, E. R. D. Maconochie, Edward P. Maitland, Norman Martin, W. J. Mayne, R. C. J. Meyer, B.A., J. E. Mitchell, T. S. Mitchell, J. A. Morris, G. S. Norman, J. H. H. Pearson, A. A. W. Petrie, J. P. du Plessis, N. H. Prior, E. M. Reid, J. J. van Rensburg, Philip Rovtowski, M. W. Ruthven, P. H. Salmond, Charlotte D. Schaeffer, Frederick Shannon, R. G. Sherlock, John T. Simson, J. D. Skinner, E. Drybrough Smith, W. B. Somers (with distinction), H. M. Spoor (with distinction), W. A. Stewart, J. Wightman Stirling, William Stobie, Adam Tait, J. C. Tennant, Eleanor M. Thompson, A. E. Turnbull, H. S. Wallace, F. K. te Water, and Adam White.

Second Professional Examination.—J. H. Aikman, M.A., J. A. Ainscow, A. W. Atkinson, R. C. E. Atkinson, R. G. A. Bagnall, C. F. Bainbridge, C. R. M. Baker, D. M. Barcroft, A. J. Beattie, K. H. Black, Richard Blatherwick, F. H. Bradley, I. W. Brebner, Mary Brown, T. Graham Brown, B.Sc., D.S. Buist, C. H. Burgess, S. T. Champtaloup (with distinction), A. E. Chisholm, J. M. Christie, W. I. M. Clark, R. D. Clayton, William Core, M.A., S. G. Corner, Denis Cotterll, Willi Cramer, Ph.D., R. G. Cunningham, Jagonmohon Dass, Arnold Davies, A. M. D. Dick (with distinction), J. T. Dickson, T. H. Dickson, M. G. Gill, A. M. Drennan (with distinction), Robert Duncan, James Dundas, D. D. Dunn, E. W. Dyer, S. S. Dykes (with distinction), David Eakin, J. G. Fleming, M. S. Fraser, Robert Fraser, J. W. Frew (with distinction), W. J. Geale, Laurence Gibson, E. C. Girling, G. A. Gordon, W. L. Gordon, W. H. Gowans, K. K. Grieve, James Grimoldby, George Gunn, J. A. Harley, G. H. Howe, F. O. Inglis, Blanche M. L. Johnston, T. B. Johnston (with distinction), N. W. Kidston, A. G. K. Ledger (with distinction), Alfred Leitch, Olive T. Leonard, Peter Lernie, J. P. Lowson, R. D. M'Allister, J. S. Macdonald, W. K. Macdonald, J. W. S. Macfie, W. O. S. M'Gowan, G. B. Macgregor, T. S. M'Intosh, D. F. Mackenzie, J. N. Maclaughlin, Murdo Maclean, M.A., John A. MacLeod, Helen M. M'Millan, John B. M'Morland, Robert P. M'Morland, A. C. B. M'Murtrie, Kenneth M'Murtrie, J. M. Macphail, J. N. M'Turk, David Mann, J. S. Manson (with distinction), Jamestna J. Marr, R. P. Mathers, John Mathewson, M.A., G. M. Melville, C. Irvine Milne, C. James Milne, H. J. More, R. H. Nolan, J. S. Orwin, J. S. Peebles, A. M'Tier Pirrie, B.Sc., George Pollock (with distinction), H. B. Porteous, Austin Priestman, C. A. Purnell, Claude Pycroft (with distinction), Mabel L. Ramsay, Gustav Raubenheimer, W. H. Riddell, C. S. C. Rippon, John Ritchie (with distinction), H. D. Robb, R. M. N. Robb, W. S. I. Robertson, Rees Rose, M.A., Frank Ross, J. M'Donald Ross, Z. M. H. Ross, Eustace Russell, James Scott, T. H. Scott, A. D. Stewart (with distinction), H. G. Sutherland, W. J. Taggart, K. R. Tampi, D. R. Taylor, H. V. Taylor, William A. Taylor, C. H. Tawsley, E. R. Thompson, H. H. Thorburn, J. N. Turnbull, Annie D. Urquhart, A. G. Visser, G. F. C. Wallis, Thomas Walsh, R. R. Walton, A. I. Shepheard Walwyn, Richard Wilkins, O. H. Williams, W. E. R. Williams, C. R. Wills, Ethel Wiseman, R. M. Wishart, A. F. Wright, Emily C. Wybourne, and A. W. Young.

Old Regulations.—George A. Grierson.

Third Professional Examination.—Thomas Addis, Francis Aitken, D. C. Alexander, J. C. D. Allan, A. C. Alport, A. G. Anderson, William Anderson, G. S. Banks, D. M'F. Barker, J. M. Barkley, W. J. E. Bell, C. E. Blair, D. P. Blair, George Blair, R. A. Blake, Herbert Brown, J. W. Cairns, T. F. Campbell, H. M. Cargin, Marjorie Duake Cohen, H. P. Cook, James Craw, D. C. Crole, J. A. Cruickshank, A. B. Darling, Thomas Davidson, M.A., J. M. Dickson, H. A. Edwards, C. E. Elliston, F. E. Field, C. N. Finn, M. C. Forsyth, R. S. Frew, W. G. Frohlich, Jessie H. Gellatly, William Gemmill, Eleanor A. Gorrie, J. M. Grant, Joseph Green, C. Rose Greenfield (with distinction), J. C. Grieve, James A. Gunn, M.A., B.Sc., George Hadden, J. D. Harmer, Ada A. Hatchard, A. S. Hendrie, W. M. Hewetson, Jean S. Hogg, J. R. Holgate, Joseph Ings, T. Scoresby Jackson, J. P. S. Jamieson, J. H. H. Joubert, G. F. Joy, M.A., Solomon Kark, Ethel Landon, J. M. Lauder, James Lindsay, W. L. Locke, John MacDonald, Peter M'Ewan, M.A. (with distinction), T. A. MacGibbon, J. D. M'Kelvie, K. W. Mackenzie, Murdo Mackinnon, A. C. M'Master, Stewart M'Naughton, Charles M'Neil, M.A., N. N. G. C. M'Vean, S. E. Martin, E. S. Massiah, Alexander Mathieson, D. M. Mathieson, M.A., A. I. Miller, O. M. Mirylees, C. E. S. Mitchell, J. S. Mitchell, H. B. Morris, D. L. Morrison, R. R. Murray, A. W. Neill, G. P. Norman, A. J. R. O'Brien, A. A. Ollivierre, D. H. Paul, H. E. Rawlence, Charles Reece, A. E. Carey Rees, B.A., A. O. P. Reynolds, W. E. Reynolds, W. G. Robertson, M.A., W. Latto Robertson, J. Z. H. Rousseau, B.A. (with distinction), Alexander Santison, W. M. Scott (with distinction), W. J. B. Selkirk, D. W. Sibbald, E. S. Simpson, Oliver Smith (with distinction), S. A. Smith, T. R. Smith, A. G. V. van Someren, A. B. Spence, J. R. Tannahill, J. A. R. Thompson, R. B. Thomson, Nettie B. Turnbull, Edward Valenzia, A. N. J. Vizarat, Frances M. Wakefield, R. C. Walker, H. E. A. Washbourn, H. C. Weber, J. D. Wells, W. H. Welsh, F. P. Wernicke, Elsie B. Wilkie, H. C. Wilson, and James Young.

LONDON SCHOOL OF TROPICAL MEDICINE.—Of the students of the above school who presented themselves for the examination at the end of January-April session, 1904, the following have passed:—

Norah Lenwood,* A. L. Hoops,* W. M. Eaton,* J. B. Cleland,* Olive McDougall,* K. McGahey,* J. Eldon, J. E. M. Brown, M. E. Leicester, A. E. E. Twynam, R. L. Roe, H. G. Mckinney, G. F. Whyte, C. T. Costello, and C. W. Somerville.

* Passed with distinction.

CONJOINT EXAMINATIONS IN IRELAND BY THE ROYAL COLLEGE OF PHYSICIANS AND THE ROYAL COLLEGE OF SURGEONS.—The following candidates have passed the first professional examination:—

A. Honours.—James Murray and E. Waide.

B. Pass.—F. H. Black, S. Blake, A. Curry, E. Evans, H. S. Johnston, G. S. Levis, F. Mahony, A. E. S. Martin, Richard Power, G. W. Stanley, and J. P. Zeederberg.

Completed the Examination.—W. Breen, R. J. Brookes, P. Ferguson, J. P. Grainger, C. A. O'Burne Ryan, G. G. Stephenson, and P. J. Williams.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bologna:* Dr. Salvatore Levi-Catellani has been recognised as *privat docent* of Surgery and Operative Medicine.—*Cracow:* Dr. Hoyer has been promoted to the Ordinary Professorship of Comparative Anatomy. Dr. Ludomil Korczynski has been granted the title of Extraordinary Professor.—*Florence:* Dr. Carlo Tonarelli has been recognised as *privat-docent* of External Pathology and Dr. Giuseppe Guicciardi as *privat docent* of Midwifery and Gynæcology.—*Frankfort (Institute of Experimental Therapeutics):* Dr. Julius Morgenroth has been granted the title of Professor.—*Freiburg:* Dr. Franz Knoop of Shanghai has been recognised as *privat docent* of Physiological Chemistry and Dr. W. Trendelenburg of Rostock as *privat-docent* of Physiology.—*Giessen:* Dr. Bruno Henneberg, Prosector of Anatomy, has been promoted to an Extraordinary Professorship. Dr. Paul Strömer has been recognised as *privat docent* of Gynæcology.—*Greifswald:* Dr. Franz Soetbeer has been recognised as *privat-docent* of Children's Diseases.—*Halle:* Dr. A. Siegert of Strasburg has been appointed Extraordinary Professor of Pediatry.—*Heidelberg:* Dr. Ernst Schwalbe, First Assistant to Professor Arnold, has been promoted to an Extraordinary Professorship. Dr. Rudolf Magnus, First Assistant to Professor Gottlieb in the Pharmacological Institute, has been also promoted to an Extraordinary Professorship. Dr. Erwin Kehrer has been recognised as *privat docent* of Midwifery and Gynæcology.—*Kieff:* Dr. Lapinsky has been appointed Extraordinary Professor of Neurology and Psychiatry.—*Königsberg:* Dr. Ernst Meyer, son of the late Professor Ludwig Meyer of Göttingen, has been appointed Professor of Psychiatry in succession to Dr. Bonnhoeffer who goes to Heidelberg. Dr. Martin Gildemeister has been recognised as *privat-docent* of Physiology.—*Leipsic:* Dr. J. H. Rule, Extraordinary Professor of Dermatology, has been promoted to an Honorary Professorship.—*Lille:* Dr. Ausset, *agrégé*, has been appointed to the chair of Therapeutics.—*Napies:* Dr. Raffaele Milervini has been

recognised as *privat docent* of External Pathology, Dr. Nobile Scalinci as *privat-docent* of Ophthalmology, and Dr. Anacleto Romano as *privat-docent* of Electro-therapeutics.

TRAINED NURSES ANNUITY FUND.—A meeting will be held on behalf of the Trained Nurses Annuity Fund at 19, Stratford place, by kind permission of Emily, Lady Ampthill, on Wednesday next, April 27th, at 3.30 P.M. Lady Loch will preside and among the speakers will be Mrs. Garrett Anderson, M.D., and Lady Helen Monro Ferguson.

THE STATE CHILDREN'S ASSOCIATION.—The fifth report of the State Children's Association dealing with the years 1901-03 is a document which will repay careful perusal. The association was founded in 1896 and seeks to better the condition of the large number of children dependent on the rates, of whom 60,000 are wholly in charge of the guardians. The objects of the association are: (1) to obtain the dissolution of large aggregated schools, so that the children may be brought up when possible in families or in small groups, where they will be in daily touch with the varied interests and activities of social life; (2) to dissociate the children from all connexion with the workhouse and the officials who have to deal with a pauper class; and (3) to obtain for the State further powers of control over neglected children. Through its Parliamentary committee, by interviews and by memorials, the association has secured attention from the Local Government Board to necessary reforms, not only with regard to boarding out but to many points which concern the welfare of State children generally. The report can be obtained (price 3*d*.) from the office of the association, 58, Old Broad-street, London, E.C., or from Messrs. P. S. King and Son, 2 and 4, Great Smith-street, Westminster, S.W.

UNIVERSITY OF OXFORD: SECOND EXAMINATION FOR THE DEGREES OF B.M. AND B.CH.—The Board of the Faculty of Medicine gives notice that on and after Trinity Term, 1905, the whole of the regulations under the head IX. Forensic Medicine and Hygiene (see Examination Statutes, pp. 191, 192) will be struck out and the following will be substituted for them—viz.: "IX. Public Health and Forensic Medicine. The examination shall consist of (1) a written paper of three hours, (2) a *viva voce* examination. The subjects of the examination will be: Part I., Public Health.—1. *Water.*—Sources of supply. Questions relating to (*a*) quantity, (*b*) quality, (*c*) storage, (*d*) distribution, (*e*) sources of pollution. 2. *Food.*—Diets in relation to age and occupation. Principles involved in estimating the sufficiency and wholesomeness of foods. Dangers due to specifically infective and toxic impurities. 3. *Air.*—The chemical and bacteriological examination of air with reference to its effects on health. Quantity and quality of air. Natural ventilation. Principles involved in artificial ventilation and warming of air. 4. *Soil.*—Principles involved in the physical, chemical, and bacteriological examination of soil with reference to its influence on health and to the presence of specific causes of disease. Ground and sub soil water. 5. *Dwellings.*—Sites and structure. Sanitary arrangements. The dwellings of the poor in towns and rural districts. The methods of the disposal of excreta in town and country. 6. *Hospitals and schools.*—Principles involved in the construction of general, surgical, and isolation hospitals and of schools. 7. *Disinfection.*—Ordinary methods of disinfecting rooms, clothing, bedding, and excreta. 8 *Vital statistics.*—The elementary interpretation of statistical data relating to births and deaths. Effects of age, distribution, density of population, occupation, and infectious disease on mortality. 9. *Offensive and dangerous trades.* 10. *Sanitary laws and administration.*—A general knowledge will be required of the following: the law relating to the duties of medical officers of health; the relations of the medical officer of health to the general practitioner of medicine; general statutes and regulations relating to the notification and treatment of infectious disease, to the correction of nuisances generally, and of insanitary conditions in houses; the law relating to vaccination. 11. *Infectious disease.*—The prophylaxis against enteric fever, diphtheria, scarlet fever, and small-pox, and the methods to be adopted in preventing the spread of infectious disease. Part II., Forensic Medicine.—I. The proceedings of legal tribunals with reference to medical evidence and the conduct of medico-legal investigations. II. The subjects to which medical evidence relates—namely: 1. *Life.*—Expectation of life, life insurance, identity of the living, proofs of criminal violence, general nature of injuries. 2. *Death.*—Signs and modes of death, time of death, death from natural causes, death by violence, accident, poisoning (including poisoning by gases), starvation, asphyxia. 3. *Birth and reproduction.*—Conception and gestation, living and still-birth, criminal abortion, impotence, sterility, violation, unnatural offences. 4. *Lunacy.*—The laws relating to lunacy."

THE ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—The first section of the new buildings of this hospital was opened for inspection by the press on April 20th. At present, however, only the out-patient department is apparently far enough advanced for use. When fully completed the new buildings will contain provision for about 200 beds with a separate nurses' home. The portion of the hospital now in progress provides for about 100 beds, and the out-patient department, which occupies the whole of the lower ground floor, is approached from Waterloo-road with separate entrances and exits. The ground floor contains the administrative offices, with accommodation for secretary, committee, matron, resident medical staff waiting-rooms, hall and entrance porch, situate at the corner of Waterloo-road and Stamford-street. The first, second, and third floors are devoted to the wards. Each ward has an open balcony facing Waterloo-road, with separate sister's room and ward scullery. The bath rooms and sanitary offices are separated by a ventilated corridor on each floor. Provision is made for a day-room on the first floor, an isolation ward on the second floor, and an operating theatre on the third floor. The fourth floor is reserved for the kitchen offices and bedrooms for the staff. A hydraulic patients' lift and service lifts from top to bottom of the building are provided. The floors are of fire resisting construction throughout. Hydrants with fire-hose will be attached to each landing and an iron escape staircase will be provided outside with exits from every floor. The heating will be by hot water, and electric light will be provided throughout. The front of the new buildings is of red brick and terra-cotta. The corner entrance porch is of glazed ware, the cost of which is being defrayed by Messrs. Doulton and Co. as a gift to the hospital. The contractors are Messrs. Holliday and Greenwood, Limited, and the architects are Messrs. Waring and Nicholson of 38, Parliament-street, London, S.W.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Another Weights and Measures Bill.

A BILL introduced by Mr. BOUSFIELD to secure greater uniformity in the administration of the law relating to weights and measures has been read a second time in the House of Commons and referred to the standing committee on law. It will be recollected that a Bill for the introduction of the metric system of weights and measures was presented in the House of Lords some six weeks ago. In the interval it has been read a second time and considered and amended in committee, but an incident that occurred in the second reading debate of the Bill "to secure greater uniformity" seems to foreshadow its fate when it reaches the Lower Chamber. In the fourth section of Mr. BOUSFIELD'S Bill it was proposed that after Jan. 1st, 1908, troy weight and apothecaries' weight should be abolished in favour of the metric system. Several members approved of this. It was stated, indeed, that 20 per cent. of the Members of the House were willing to support the introduction of the metric system. But as the debate proceeded it became clear that the retention of the section would wreck the Bill and Mr. BOUSFIELD was compelled to promise that in committee he would withdraw the proposal. Mr. GERALD BALFOUR, speaking later, said he was glad to learn of this decision. It was a wise one and he ventured to think that the provision ought never to have been introduced into the Bill at all. The fringe only of the question was touched and it raised very great difficulties without solving them. It certainly would have raised against the Bill the opposition of those trades which were more directly concerned with the troy and the apothecaries' weights and if the promoters had insisted on regarding it as a vital part of the Bill he would have felt bound to oppose it on behalf of the Government.

Tuberculosis in Animals.

Another Bill which has been read a second time during the week and referred to a committee deals with the question of tuberculosis in animals. The promoters' contention is contained in these words:

"Whereas it frequently happens that it is impossible to detect the presence of tuberculosis in a living animal from its outward appearance and yet such disease may exist to an extent which may justify the condemnation of the carcass after slaughter as unfit for human food, it is expedient to make provision for compensating the owner." From the medical point of view three of the speeches were interesting. Sir HERBERT MAXWELL, who presided over the Royal Commission which reported six years ago, complained that nothing had been done to give effect to the recommendations of that Commission. If the question of tuberculous disease in cattle had been properly grappled with in this country as it had been in certain continental States any grievance would, in his opinion, have been removed and the question of compensation would not have arisen. It was with a feeling akin to shame that they must contemplate what had been done in coping with tuberculosis successfully and practically and with the concurrence of the people in a small State like Denmark, while no attempt was made in this country to stamp out this most destructive disease. Dr. FARQUHARSON pointed out that it was a very serious fact that while consumption among grown persons had decreased the same disease among children was largely increasing and the problem was whether this was not due to tuberculous milk, and Dr. HUTCHINSON protested against the attempts to stop the Bill which was, in his opinion, for the benefit of the public health.

Superannuation of Irish Poor-law Medical Officers.

Mr. T. W. RUSSELL has brought in a Bill to provide superannuation for Poor-law medical officers in Ireland.

HOUSE OF COMMONS.

WEDNESDAY, APRIL 13TH.

Vivisection of Dogs.

Five minutes before midnight Sir FREDERICK BANBURY moved in a sentence the following motion: "That in the opinion of this House no operations for the purposes of vivisection should be performed on dogs." As was inevitable in the circumstances the proposal was "talked out."

An Error of Judgment.

Mr. GRIFFITH BOSCAWEN asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the action of Dr. Tierney, J.P., in adjudicating at petty sessions at Clones in cases where he had already acted as medical adviser to, and had accepted fees from, one of the parties; whether a specific case was brought before the Lord Chancellor on Jan. 2nd last; and, if so, whether any notice had been taken of Dr. Tierney's conduct.—Mr. WYNDHAM replied: This case was brought to the notice of the Lord Chancellor who upon consideration of all the circumstances arrived at the conclusion that official action in the matter was not called for. Steps were taken, however, to convey to the justice named an intimation that the Lord Chancellor considered he had been guilty of an error of judgment in adjudicating in the case in question.

Medical Officers in the Highlands.

Mr. CATHCART WASON asked the Secretary for Scotland whether he would say what system, if any, was adopted by parish councils in the Highlands and Islands of Scotland to acquaint the medical officer of the sickness of paupers, more especially those situated at a considerable distance from his residence; whether the rules as to medical relief of the poor were strictly adhered to by parish councils in remote parishes in the Highlands and Islands of Scotlands, or whether these local bodies were permitted by the Local Government Board to place limitations on them to suit the convenience of the general public, and, if so, whether the Board would take steps to satisfy itself that a laxity with regard to its rules was to the advantage of the paupers; and whether the medical officers were required to visit the houses of paupers throughout the parish at short intervals to ascertain if the paupers were ill, or whether it was the duty of inspectors of poor to intimate to the medical officers when the paupers were requiring medical and surgical attention. Mr. GRAHAM MURRAY replied: The matters touched upon in the question of the honourable Member are dealt with in the report already submitted to the House of the Departmental Committee appointed by the Local Government Board for Scotland to inquire into the system of Poor-law medical relief, &c. That report will shortly be available and I beg to refer the honourable Member to the recommendations contained in it.

The Plague in India.

Sir WALTER FOSTER asked the Secretary of State for India whether he could give the number of deaths from plague in India and the Bombay and Bengal districts respectively for the four weeks ending March 26th.—Mr. BRODRICK replied: Except as regards the Bombay Presidency the returns of plague deaths in India received up to to-day do not go beyond the week ended March 19th. The totals for the three weeks ended on that date are 15,187 for Bengal, 24,390 for the Bombay Presidency, and 102,962 for the whole of India, including the above. The number of plague deaths in the Bombay Presidency alone during the month of March was 35,416.

THURSDAY, APRIL 14TH.

The Plague at Hong Kong.

Answering Sir WALTER FOSTER Mr. LYTTELTON said: According to the weekly telegraphic reports from Hong-Kong on the subject, which are regularly communicated to the press as soon as received, there have been 11 cases of plague and 11 deaths at Hong Kong this year up to April 9th. I have received no detailed report as to the occurrence of plague during the current year but I have given instructions that a report of the acting medical officer of health on the epidemic of plague during the first seven months of last year, which has just been received, should be sent to the honourable Member.

Inoculation for Plague.

Sir JOHN ROLLESTON asked the Colonial Secretary whether, in view of the results of serum inoculation for plague in India, he would prohibit the use of plague serum in Johannesburg.—Mr. LYTTELTON replied: I am not prepared to interfere with the local medical authorities in this matter and I am not aware of any reasons for the suggested prohibition of the use of plague serum to which no objection is taken by my medical advisers.

Adulterated Spirits.

Mr. MACVEAGH asked whether the attention of the Government had been called to a recent decision of the Justiciary Appeal Court of Scotland declaring it illegal to describe and to sell as brandy a mixture of patent spirits and brandy and upholding a conviction by the Sheriff Court of Hamilton under the Sale of Food and Drugs Acts for this offence; whether they were aware that the officers of excise and customs were compelled by their regulations to allow, in the Government bonded warehouses, German spirit to be labeled as brandy and English spirit as Scotch whisky, and whether such legislation would be promoted or such alterations in the excise and customs regulations made as would render it impossible for these frauds to be perpetrated under official supervision. Mr. CAVENDISH replied that the regulations of the Boards of Customs and Inland Revenue merely prescribed that revenue officers were not to concern themselves in any way with labels placed on spirits issued from bond for home consumption beyond seeing that the labels did not contain any expression implying official supervision. It was not possible under the rules that German spirit should be labeled in bond as whisky.

MONDAY, APRIL 18TH.

Treatment of Lunatics.

Mr. SLOAN asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the practice of taking lunatics to the workhouses without first having them certified by a medical practitioner or examined by a magistrate as prescribed by law; and, if so, whether he would say in what circumstances it was permissible to admit such cases without the necessary safeguards to the safety of the persons; and whether instructions would be given for the carrying out of the law in this respect?—Mr. WYNDHAM replied: A person of unsound mind who is *primâ facie* destitute is entitled to be admitted to a workhouse. It is not legally necessary that he shall be certified by a medical practitioner or examined by a magistrate before admission. But such a person may, after admission, be transferred to a lunatic asylum if the circumstances justify the transfer.

Deaf and Dumb Children.

Mr. CLANCY asked the Chief Secretary to the Lord Lieutenant of Ireland whether he meant to deal this session with the question of extending to Ireland the provisions regarding deaf and dumb children which have been in force in England for several years past and under which a sum of £37,090 for deaf, blind, and defective children in England has been placed on the Estimates for the current year, while no grant is made for such a purpose in Ireland.—Mr. WYNDHAM replied: I hope to be able to deal with this matter by legislation during the present session but I cannot at present give a pledge.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

ABRAM, G. STEWART, B.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Junior Assistant Physician to the Royal Berkshire Hospital.

ADAM, J. WILSON, M.B., C.M. Glasg., has been appointed Medical Physician to the Aberdeen Dispensary.

ANDERSON, C. A., M.B., M.S. Edin., has been appointed Assistant House Surgeon to the Portsmouth Hospital.

BURNET, JAMES, M.A., M.B., M.R.C.P. Edin., has been appointed Registrar to the Royal Hospital for Sick Children, Edinburgh.

COWIE, JAMES M., M.D. Aberd., D.P.H., has been appointed Medical Officer of Health and Public Analyst for the County Borough of Burton-upon-Trent.

ELLIS, L. ERASMUS, M.D. Brux., M.R.C.S. Eng., L.R.C.P. Lond., L.S.A., has been appointed Clinical Assistant at St. John's Hospital for Diseases of the Skin, Leicester-square, London, W.C.

GLEGG, R. ASHLEIGH, M.B., D.P.H. Edin., has been appointed Assistant Medical Officer of Health of Leith, and Resident Physician to Leith Public Health Hospital.

LLOYD, WILLIAM, F.R.C.S., has been appointed Surgeon in Charge of the Nose, Ear, and Throat Department, St. Pancras and Great Northern Dispensary, W.C.

MOIR, D. R., M.A., M.B. Aberd., has been appointed Visiting Surgeon to the Hull and Sculeoates Dispensary.

PENTREATH, C. H. R., B.A., M.B., B.C. Cantab., has been appointed Resident Medical Superintendent of the Government Sanatorium for Consumption, Cambridge, New Zealand.

WALL, CECIL, M.A., M.D. Oxon., M.R.C.P. Lond., has been appointed Honorary Physician to the Poplar Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRIGHTON, HOVE, AND SUSSEX THROAT AND EAR HOSPITAL, Church-street, Queen's-road, Brighton.—Honorary Consulting Surgeon, also Honorary Surgeon.

BRIGHTON, ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road.—House Surgeon. Salary £80, with board, lodging, and washing.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Pathologist. Salary £300 a year.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—House Physician. Also House Surgeon. Salary £80 respectively, with board, residence, and washing.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, 17, Bartlett's-buildings, Holborn-circus, E.C.—Honorary Physician.

GORDON HOSPITAL, Vauxhall Bridge-road, S.W.—Surgeon.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Medical Registrar. Honorarium 50 guineas a year.

LEICESTER INFIRMARY.—House Physician. Salary £100 per annum, with board, apartments, and washing.

LINCOLN GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £200 per annum, with apartments, fire and gas.

LIVERPOOL, MILL-ROAD INFIRMARY.—Assistant Medical Officer, unmarried. Salary £120 per annum, with board and apartments.

LIVERPOOL STANLEY HOSPITAL.—Second House Surgeon. Salary £80 per annum, with board, residence, and washing.

MARGARET-STREET HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Cavendish-square, W.—Assistant Physician (honorary).

NORFOLK AND NORWICH HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing. Also Assistant House Surgeon for six months. Honorarium £20, with board, lodging, and washing.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary £100, with board, lodging, and washing.

OXFORD, RADCLIFFE INFIRMARY.—Surgeon.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Physician, also House Surgeon, both for six months. Salary at rate of 50 guineas a year, with board and residence.

ROYAL HALIFAX INFIRMARY.—Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Third House Surgeon. Salary £50, with board and residence. Also three Refraction Assistants. Salary £25 a year, with lunch.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Clinical Assistants.

ST. HELENS, COUNTY BOROUGH OF.—Medical Officer of Health. Salary £450 per annum, rising to £525.

SEAMEN'S HOSPITAL SOCIETY (Dreadnought), Greenwich, S.E.—House Physician. Salary £85 per annum. Also Junior Resident Medical Officer. Salary £40 per annum. Both with board, residence, and washing.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging and washing.

SWANSEA GENERAL AND EYE HOSPITAL.—Assistant House Surgeon. Salary £50 per annum.

WESTERN DISPENSARY, Rochester-row, Westminster, S.W.—Medical Officer.

WESTMINSTER GENERAL DISPENSARY.—Resident Medical Officer. Salary at rate of £120 per annum, with rooms, gas, coal, and attendance.

WESTRAY, ORKNEY, PARISH COUNCIL.—Medical Officer and Public Vaccinator. Salary £90 per annum.

WORCESTER GENERAL INFIRMARY.—House Physician. Salary £80 per annum, with board and residence.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £120 a year, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeon under the Factory Act at Stocksbridge and at Denby Dale and Shepley, in the county of York, and at Ceres, in the county of Fife.

Births, Marriages, and Deaths.

BIRTHS.

HENDERSON.—On April 16th, at Kensington-square, the wife of Edward Erskine Henderson, F.R.C.S., of a daughter.

SHAW-MACKENZIE.—On April 17th, at Green-street, Park-lane, W., the wife of John A. Shaw-Mackenzie, M.D. Lond., of a daughter.

MARRIAGES.

PARAMORE—GODSON.—On April 14th, at Christ Church, Woburn-square, W.C., Richard Horace Paramore, M.B. Lond., M.R.C.S., L.R.C.P., to Lilian Mabel, the youngest daughter of the late Rev. Edwin Godson, M.A.

RICE—CARROLL.—On April 12th, at Mitchelstown, W. Rice, M.B., B.Ch., B.A.O. R.U.I., of Curraghmore, Fermoy, co. Cork, to Catherine, youngest daughter of the late Michael Carroll of Doneraile.

DEATHS.

FAULKNER.—On April 12th, at Westcliffe-on-Sea, Herbert Faulkner, M.R.C.S. Eng., L.R.C.P., late of Clifton, aged 47 years.

MASON.—On April 17th, at 2, York road, Birmingham, in her 98th year, Sarah, widow of the late William Mason, M.R.C.S., of Burton-upon-Trent.

MORICE.—On Feb. 20th, 1904, at Greymouth, New Zealand, Charles Lloyd Morice, M.R.C.S., L.S.A.

THOMPSON.—On April 18th, at Wimpole-street, W., Sir Henry Thompson, Bart., F.R.C.S., in his 84th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A COURTEOUS PRIEST.

WE received a few days ago a letter from someone signing himself (Rev.) Montague Fowler and writing from 41, Wilton-crescent, S.W. The letter inquired from us information about the books which treated of certain diseases. To this we replied that we made it an almost invariable rule never to answer questions with regard to the treatment of disease unless they were addressed to us by a medical man. The Rev. Montague Fowler acknowledged our letter in the following terms:—

41, Wilton-crescent, S.W.

DEAR SIR,—I am in receipt of your letter of to-day's date, which has nothing to do with the question I asked you—to which, I gather, you are unable to give me an answer. I am sorry to have troubled you, but I was given to understand that you were *en courant* with the standard medical works.

Yours fy.,
MONTAGUE FOWLER.

We are asked constantly by members of the public to assist them to find in medical literature the way to treat disease. We, of course, tell such inquirers to consult their medical men, because they will then get the information only if it is good for them. We do not give medical advice or recommend treatment or supersede medical men with their patients, and the good sense of the position thus taken up has never been challenged previously by any of our correspondents. It has been left to the Rev. Montague Fowler to do so. We do not know this gentleman, he is not a medical man, and has no claim on our time. As he has been unable to understand our previous communication to him we will strive this time to make ourselves particularly clear. If the Rev. Montague Fowler wants medical advice let him seek it from his medical man, and pay for it.

"NOTHING ILLEGAL ENTERTAINED."

WE have received from a correspondent the circular which follows:

Mrs. B. S. Arons,
27, Manchester Road, Blackpool.

NOTHING ILLEGAL ENTERTAINED, strict confidence, no injurious drugs used. Advice Free.—State your case clearly.—Send full postal address. Stamped addressed envelope for reply.

Womans' Remedies made by a woman for women.

Female Pills.

Removes Irregularities, Safe, Reliable. The Pills are a never failing Remedy in the most troublesome disorders, in most cases where a woman has taken these pills, for about a week before and after, each month, they have kept her quite regular. Should also be taken during the month. They will purify the system, stimulate the blood and put a healthy colour in the cheeks and skin. They may be taken with perfect safety and success, by the young unmarried female suffering from Amenorrhea, equally so in the case of Females of mature years in the change of life.

2/9. PRICE 2/9 PER BOX. POST FREE TO ANY ADDRESS. 2/9.

Female Mixture.

The Safest and Surest Mixture for Females. Highly recommended by Ladies in all parts of the Empire. It is essential that the Mixture should be taken, and should be persevered with until it has thoroughly established the natural flow (state time of suppresion)

This Mixture has great strengthening and invigorating properties which act directly on the Female Organs. Price 4/6 per Bottle, Extra Strong and Larger Size 6/- sent post paid securely packed. The Pills and Mixture can be taken together quite harmless. Kindly give my address to a friend if you derive benefit.—Mrs. ARONS, 27, Manchester Road, Blackpool.

I have made Female complaints my Special Study and if you have been "gulled" by Chemists and Quacks, don't despair, give my Pills and Mixture a fair trial, have relieved and given happiness to many sufferers.

P.S. India Rubber Goods should never be used, unnatural and injurious to both Sexes. Causes Cancer and Tumours.

On the back is written the following:

Barrenness in Women, in cases where a Woman, has not had children, I have cured Sterility, REMOVED the BARRIER.

Cancer and Tumours, treated without the aid of Cutting—But by PURE HERBAL REMEDIES—ONLY.

All Cases and Diseases, treated with GREATEST CONFIDENCE.

The gentleman who has sent us the document asks "Can nothing be done to stop such frauds?" We confess that we do not know what are the principles upon which the police act. This woman is clearly advertising for clients whom she may assist in their desire to procure

abortion upon themselves. The almost invariable cause of the suppression of menses in a young woman is pregnancy. What are "indiarubber goods" used for save to prevent pregnancy? And the woman herself puts forward her stuff as a substitute for "indiarubber goods." That Mrs. Arons's pure herbal remedies would not act as ecbolics is probable, but it is certain that she expects gullible females to think differently that they may invest 4s. 6d. or 6s. with her for some rubbish the initial cost of which is probably 1d. or 2d. We do not know why the police ignore the manœuvres of Mrs. Arons and her like, but when we remember that until recently many reputable newspapers actually inserted the advertisements of such people, and note that some even do so still, we can understand that the authorities are puzzled.

HOLMAN TESTIMONIAL FUND.

THE following further list of contributions has been forwarded to us by the honorary treasurer of this fund, Dr. John H. Galton, Chunam, Sylvan-road, Norwood, S.E., by whom or by Mr. W. A. Berridge, Oakfield, Redhill, Surrey, subscriptions will be received:—

	£	s.	d.
Dr. Fred. Durham ...	1	1	0
Dr. Francis Bossey ...	2	2	0
Dr. J. Roberts Thomson, J.P.	3	3	0
Mr John Crew, J.P.	1	1	0
Dr. W. H. Tayler ...	1	1	0
Dr. E. L. Ademey ...	0	10	6
Mr Geo. C. Croft ...	5	5	0
Dr. M. Baines	1	1	0
The Misses Maynard	2	2	0
Mary Ann Jaffray ...	1	1	0
Sir Hermann Weber ...	2	2	0
Sir R. Douglas Powell, Bart., K.C.V.O. ...	2	2	0
Mr. Malcom A. Morris	3	3	0
Mr. Jas. Nightingale	1	1	0
Dr. Seymour S. Sharkey	1	1	0
Mr. Jeremiah Colman	3	3	0
Mr. T. L. Grün	2	2	0
Professor Howard Marsh	2	2	0
Mr. H. T. Butlin ...	3	3	0
Sir Thomas Smith, Bart., K.C.V.O. ...	2	2	0
Dr. H. R. Crocker ...	1	1	0
Mr. E. F. Drake-Brockman	1	1	0
Dr. Edward F. S. Green	0	10	6
Mr. Clement L. Smiles...	5	5	0
Dr. J. G. Glover, J.P....	1	1	0
Miss Adelaide Baxter ...	1	1	0
Mr. Hutchins Williams	1	1	0
Dr. W. A. Evelyn	1	1	0
Dr. G. Fielding Blandford	1	1	0
Sir Alfred Cooper	2	2	0
Dr. Leonard W. Sedgwick	1	1	0
Mr. R. W. Inglis	5	5	0
Mr. S. Parsons Smith, J.P.	1	1	0
Mr. T. M. Butler	1	1	0
Dr. William Travers ...	1	1	0
Mr. John H. Morgan, C.V.O.	1	1	0
Lord Alverstone	2	2	0
Dr. F. T. Roberts	1	1	0
Mr. Anthony A. Bowlby, C.M.G.	1	1	0
Dr. David W. Roberts	1	1	0
Mr. Sydney C. Austin	1	1	0
Dr. John G. Ogle	1	1	0
Dr J. W. Bond	2	2	0
Dr. R. L. Bowles	2	2	0
Mr. J. L. Siordet	1	1	0
Dr. W. Essex Wynter ...	1	1	0
Mr. F. W. E. Kinneir ...	1	1	0
Dr. A. P. Luff	1	1	0

THE ROYAL METEOROLOGICAL SOCIETY.

AT the monthly meeting of the Royal Meteorological Society held on April 20th at the Institution of Civil Engineers, Great George-street, Westminster, a paper, which was of some medical interest, was read by Mr. W. L. Dallas on the Variation of the Population of India compared with the Variation of Rainfall in the Decennium 1891-1901. The author showed that during the four years 1891-95 the rainfall was generally normal or heavy over nearly the whole country, and during the six years 1895-1901 the rainfall was greatly deficient. During the former or "wet" period the rainfall was deficient over Upper Burma and Madras, was normal over the remainder of Burma, Assam, Bengal, and the west coast of the Peninsula, and was excessive elsewhere; while during the latter or "dry" period the rainfall was again deficient over Upper Burma, normal or excessive over the remainder of Burma, Assam, Bengal, the United Provinces, the North-West Frontier Province, and the South of Madras, and was deficient elsewhere, most so over Rajputana and neighbouring areas. The general census of India on March 1st, 1901, showed the total population to be 293,479,477, which, excluding the territories not included in the 1891 census, was an increase of only 1·3 per cent. The population had thus failed to increase according to the normal rate during the decade. Part of this failure was no doubt due to epidemics. The author, however, shows that there is an unmistakeable relationship between the variations of the population and the variations of rainfall during the dry years. The area within which the most serious decrease of population occurred coincides almost exactly with the area of greatest deficiency of rainfall.

PUS IN THE MOTIONS OF A CHILD.

To the Editors of THE LANCET.

SIRS,—I should be very grateful if any of the readers of THE LANCET could throw light on the following case. The patient is a girl seven years of age, who has periodical discharge of pus in the motions once a month or so. There is absolutely no sign of tuberculous peritonitis; she has never had appendicitis; she does not suffer from worms. The only symptom is an occasional pain described as "stitch" over the left iliac crest when she runs about; otherwise she is apparently in good health. I may mention that the last time the discharge of pus was noticed was after a dose of castor oil given for slight constipation, to which she is subject.

I am, Sirs, yours faithfully,

April 15th, 1904. A PUZZLED G.P.

BRITISH MEDICAL BENEVOLENT FUND.

To the Editors of THE LANCET.

SIRS,—I shall be very much obliged if you will give me room to say that I am constantly receiving applications for clothing, &c., and am unable to comply with requests as our wardrobe is empty. For many years I have received and distributed clothing of all sorts and have been able to afford most useful help to many of the recipients of aid from the Fund. Any members of the profession who have clothing with some wear in it to dispose of may send it to me at this address and I can guarantee that it shall be distributed to the best advantage. I have now applications for men's clothing of every description, women's clothes and underclothing, children's school clothes (boys and girls), black dresses to start girls in situations, hats, bonnets, jackets, and cloaks, evening dress, furs of all sorts, and boots and shoes. Everything comes in useful and finds its place and room can be found for material to make up as wanted. The supply of clothing has fallen off during the last three years and it has been found difficult to keep abreast of wants. I would particularly ask executors and those who have to deal with the wardrobes of deceased medical men or have a chance of influencing the disposal of the wardrobes of patients to think of their poorer brethren and remember our wants.

I am, Sirs, yours faithfully,

26, Linden-gardens, W., April 19th, 1904. EDWARD EAST.

DR. J. T. C. CONRY'S DEFENCE FUND.

To the Editors of THE LANCET.

SIRS,—Since April 12th, when the amount received was £18 16s. 6d., the following sums have been contributed:—

	£	s.	d.
Dr. Alexander Davidson	1	1	0
Dr. T. Neville	0	10	6
Sir William Whitla... ...	1	1	0
Dr. H. Macnaughton Jones	1	1	0
Dr. E. S. W. ("A Poor Country Surgeon") ...	0	5	0
Dr. W. Pringle Morgan	1	1	0
Rev. D. J. Forbes	0	10	0
Mr. G. Vere Benson ...	0	2	6
Surg.-Gen. C. Sibthorpe	1	1	0
Dr. J. T. Higgins	1	1	0
A. M. O.	0	10	6
Dr. T. W. S. Paterson ...	0	10	6
Mr. Colin Campbell... ...	0	10	6
Dr. Jacob Pickett	0	10	0
	£23	12	0

We are, Sirs, yours faithfully,

EDWIN T. ENSOR.

162, Ladbroke-grove, W., April 20th, 1904. WALTER L. ROBERTS.

THE REDUCING POWER OF CREATININE ON FEHLING'S SOLUTION.

To the Editors of THE LANCET.

SIRS,—On p. 1026 of THE LANCET I find that "Research" desires to have reference to some work on this subject. Dr. R. S. Thomson, professor of medicine in Anderson's College Medical School, Glasgow, has worked in this direction.

I am, Sirs, yours faithfully,

April 11th, 1904. F. D.

A SIMPLE QUESTION.

To the Editors of THE LANCET.

SIRS,—May I ask your opinion on the following incident? A house vacated by a practitioner X is occupied by another practitioner Y. A former patient calls and finding X gone asks where. Y replies: "I don't know" (untrue), and adds, "I am doing his work" (untrue), thereby inducing the patient to take advice and to give a fee. Is this etiquette? Inclosing my card,

I am, Sirs, yours faithfully,

April 16th, 1904. G.P.

*** No.—ED. L.

SMOKING IN THE WARDS OF A HOSPITAL.

To the Editors of THE LANCET.

SIRS,—Is the medical officer of the local fever hospital of a county borough justified in habitually smoking a pipe whilst making his daily ward visitations and would the sanitary committee of that borough be in order in asking him to discontinue the practice?

I am, Sirs, yours faithfully,

April 18th, 1904. NICOTINE.

*** As far as possible it is useful and right to treat the hospital patient as the private patient is treated, so that, in our opinion, the alleged pipe-smoking habit of the medical officer is inexpedient and ill-mannered.—ED. L.

The Secretary of the Treherbert Medical Attendance Society.—The facts given by the correspondents of THE LANCET are not traversed. The objections to the scheme appear to us to be perfectly valid.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received:—*Eastern Morning News, Aberdeen Free Press, Sussex Daily News, Dublin Times, Birmingham Post, Surrey Advertiser, Notts Guardian, Westminster Gazette, Dublin Express, Bradford Observer, Hereford Mercury, Sanitary Record, Local Government Chronicle, Mining Journal, Hertfordshire Mercury, The Scotsman, Evening News, Surrey Comet, Revue de Chirurgie (Paris), Irish Times,* &c.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 21st, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb	Remarks at 8.30 A.M.
April 15	29·39	E.	0·01	67	58	53	54	56	Overcast
,, 16	29·71	S.W.	0·09	99	60	45	47	49	Cloudy
,, 17	30·00	S.	...	112	63	46	44	48	Fine
,, 18	30·08	W.	...	105	64	43	46	49	Cloudy
,, 19	30·16	N.E.	...	108	64	44	47	51	Fine
,, 20	29·93	N.E.	...	113	65	43	46	48	Cloudy
,, 21	30·05	N.E.	...	81	51	45	45	50	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M., St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.).

WEDNESDAY (27th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (28th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (30th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (25th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Papers:—Dr. W. J. Tyson: Some Points in the Prevention and Early Treatment of Disease.—Dr. S. Sunderland and Mr. H. J. Curtis: A Case of Tuberculous Perityphlitis with Unusual Features.

TUESDAY 26th.—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Paper:—Dr. N. D. Bardswell and Mr. J. E. Chapman: The Economic Value of the Sanatorium Treatment for the Working Classes based upon After histories.

WEDNESDAY 27th.—HUNTERIAN SOCIETY (London Institution, Finsbury circus, E.C.).—8 P.M. Council Meeting, 8.30 P.M. Papers.

THURSDAY (28th).—DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND (20, Hanover-square, W.).—4.30 P.M. Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (25th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. M. H. Macleod: Clinique. (Skin). 5.15 P.M. Mr. B. G. A. Moynihan: Gall-stones and their Surgical Treatment.

TUESDAY 26th. MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. G. A. Sutherland: Clinique. (Medical.) 5.15 P.M. Dr. L. Williams: Personal Hygiene.

WEDNESDAY 27th. MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. P. Paton: Clinique. (Surgical.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Mr. R. P. Brooks: Demonstration of Cases of Ophthalmic Interest.

THURSDAY (28th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Mr. H. L. Barnard: The Principles of Abdominal Diagnosis.

FRIDAY (29th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. D. Grant: Clinique. (Ear).

SATURDAY (30th).—THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—11.30 A.M. Discussion on Food and Meat Inspection (opened by Colonel J. L. Notter, R.A.M.C., and Mr. W. Hunting).

EDITORIAL NOTICES.

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION

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